DOCUMENT RESUME

ED 089 569 HE 005 280

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TITLE Curriculum Change in Black Colleges V. A Report on a Cooperative Academic Planning and Curriculum Development Workshop.
INSTITUTION Institute for Services to Education, Washington, D.C.
PUB DATE Dec 73
NOTE 107p.; The workshop was held in Atlanta, Georgia, November 15 through 17, 1973

EDRS PRICE MF-$0.75 HC-$5.40 PLUS POSTAGE
DESCRIPTORS *Curriculum Development; *Educational Objectives; *Educational Planning; *Higher Education; Humanities Instruction; *Negro Colleges; Science Education; Workshops
IDENTIFIERS *TACTICS

ABSTRACT

This document reports on a cooperative academic planning and curriculum development workshop. Section A, plenary sessions on curriculum change and improvement, presents workshop reports concerning black college survival and academic planning for science on the local and national level. Section B, seminars on educational systems, concerns a task analysis approach to higher level objectives and criterion-reference testing, theories and practices for individualization at the college and university level, humanities innovation in black colleges, and developing the total program. (MJM)

INSTITUTE FOR SERVICES
TO EDUCATION

ED 089569

CURRICULUM CHANGE IN BLACK COLLEGES V

A Report on a Cooperative Academic Planning and Curriculum Development Workshop

Prepared by

ROOSEVELT CALBERT
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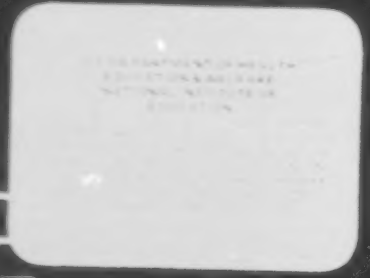

Paschal's Motor Hotel
Atlanta, Georgia
November 15-17, 1973

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2001 S STREET, N.W. WASHINGTON, D.C. 20009

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The Institute for Services to Education (ISE) was incorporated as a non-profit organization in 1965 and subsequently received a basic grant from the Carnegie Corporation of New York. The organization is founded on the principle that education today requires a fresh examination of what is worth teaching and how to teach it. ISE is a catalyst for change. Under grants from government agencies and private foundations, ISE undertakes a variety of educational tasks – working cooperatively with other educational institutions. It does not just produce educational materials or techniques that are innovative; it develops, in cooperation with teachers and administrators, procedures for effective installation of successful materials and techniques in the colleges.

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The Cooperative Academic Planning (CAP) Program, which is a programmatic component of the Institute for Services to Education, is part of the Technical Assistance Consortium to Improve College Services (TACTICS) program which is funded under Title III of the Higher Education Act. This segment of the TACTICS program is charged with the responsibility to assist black colleges to improve their academic program planning.

This workshop was sponsored in cooperation with Bishop College, with a grant made available under Section V-E of the Education Professions Development Act.

"The Project presented or reported herein was performed pursuant to a grant from the Office of Education, U.S. Department of Health, Education, and Welfare. The opinions expressed herein, however, do not necessarily reflect the position or policy of the Office of Education, and no official endorsement by the Office of Education should be inferred."

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COOPERATIVE ACADEMIC PLANNING
INSTITUTE FOR SERVICES TO EDUCATION, INC.

2001 "S" Street, N.W. Washington, D.C. 20009

December, 1973

PREFACE

The Cooperative Academic Planning (CAP) program continues to view its role as that of a catalytic component of TACTICS/ISE for effectuating curricular change on the campuses of the consortial colleges and universities that avail themselves of the CAP services. In view of the current status of higher education, it is becoming more and more evident that the colleges and universities with a black heritage must synchronize the utilization of all of the available internal and external resources that can contribute to the concerted efforts to solve their own problems. Because of these institutional efforts, the CAP workshops encompass an attempt to further stimulate cogitative thinking about the ongoing development of relevant academic programs.

Upon beginning this third academic year of existence, the CAP office pledges to continue those workshop activities that evolve programmatic thrusts and strategies which can lead to the implementation of innovative curricular proposals on the participating campuses. The previous published workshop proceedings are:

Curriculum Change in Black Colleges I – April 19-21, 1972, Atlanta Workshop – (1971-'72 Consortium)
Focus on Curriculum Change in Black Colleges II – June 13-23, 1972, Dallas Summer Workshop – (1971-'72 Consortium)
Curriculum Change in Black Colleges III – Part I – November 1-3, 1972, Atlanta Workshop; Part II – April 4-6, 1973, Atlanta Workshop – (1971-'72 Consortium)
Curriculum Change in Black Colleges IV – Part I – December 4-6, 1972, Atlanta Workshop; Part II – June 4-13, 1973, Dallas Summer Workshop – (1972-'73 Consortium)

This publication includes the proceedings of the November 15-17, 1973 implementation strategy workshop for the 1972-'73 consortium and is the third workshop in a series of four for this group of colleges and universities.

The CAP staff is deeply appreciative of the dedicated and scholarly efforts that each author exhibited in the presentation of these workshop materials.

Roosevelt Calbert
Joel O. Nwagbaraocha

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ROSTER OF WORKSHOP
AND
COLLEGE AND UNIVERSITY REPRESENTATIVES
November 15-17, 1973

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SECTION A.

PLENARY SESSIONS ON CURRICULUM CHANGE AND IMPROVEMENT

BLACK COLLEGE SURVIVAL: WHAT MUST WE DO?

Ernest A. Boykins

As I look back on it, I am not sure exactly why I chose the topic that is listed on the program. I suppose one reason is that I do not know anything about curriculum development. And, of course, I think that there are so many difficulties and so many changes that are going on as it relates to black colleges. Black colleges are so concerned with survival until it is pretty hard to prevent them from modifying the game plan almost on a minute-to-minute basis. And so some of the things, and probably most of the things that I am going to mention this afternoon, are probably not new to you. I think, however, that we must always highlight things that are important and continuously focus them in our minds. And, of course, it has been my feeling, too, that when we get ready to do something, we do not have to invent the wheel each time.

I just want to simply share with you some of the points and things that stand high in my mind; things that we developed to get The Valley game plan together.

Immediately after accepting the appointment as the second person to be Mississippi Valley State's President, I began to envision a work plan whereby I should begin to build upon a great educational enterprise. The Delta area of Mississippi was once almost a forgotten land of poor farmers and poorer people. I recognized that the future of the Valley hinged on a game plan that involved a total constituency, namely: students, faculty, staff, community and alumni.

I knew from the very first day that many persons would not have had access to higher education if the Valley had not been geographically located exactly where it is. I am aware that Mississippi Valley State College, along with other black colleges, (primarily by virtue of my own experience) would be centered as the one vehicle of hope for black Americans. They had helped to give, not only black Americans, but all Americans, strength, value and expertise. In spite of these observations on my part, I was aware of the fact that for a number of years, particularly since the 1954 Supreme Court Decision and the Educational Opportunity and Compliance Requirements of Title VI of the

1964 Civil Rights Act, the traditionally black institutions of higher learning have experienced crucial problems.

There have been many manifestations of concern over the good health and survival of traditional black institutions. In a report which swept the nation, Earl McGrath, in his study of predominantly Negro colleges and universities in transition, stated, "If, therefore, many young people, particularly those in Southern regions, are to receive any higher education, the institution, now primarily serving Negroes, must, for a considerable span of years, furnish it."

At the time McGrath made his study, there were 133 predominantly black colleges and universities. McGrath's study showed that the shortcomings of many Negro institutions could be eliminated, or at least mitigated if they had additional financial resources. In pointing out the crises of the institutions at that time, McGrath stated, "The unavoidable fact of the financial conditions in the Negro institutions is that they will require additional funds to cover current expenses and endowment if they are to improve their present program, and thus provide higher education of suitable quality for their students."

Similar concern for the survival of black institutions of higher learning was registered by William Boyd. A study undertaken by Boyd showed that from 1 to 3% of all black lawyers and Ph.D's in the United States are graduates of black colleges and universities. He estimated that the total number of blacks in these professions is about 10,000 and "despite the severe financial pressure in less than optimum magistrate systems, black colleges continue to produce graduates with both the skills and the motivation necessary for future educational and productive careers."

Other manifestations of concern appeared in a report issued by the Southern Association of Colleges and Schools. It showed that black colleges must bear the brunt of educating Negroes for the next 25 years. Whether or not public schools are turning to unitary systems, we have to turn to freedom of choice plans, or we have to turn to total segregation. The Commission validates the position made by many schools, organizations, and individuals. We are confident that the traditional black colleges and universities are in a far better position than any other social institution to initiate, plan, and conduct programs designed to compensate for the cultural lack of disadvantaged youth, and to bridge the educational gaps of individuals who are desirous of

additional educational experiences. There are still good documents on black colleges and universities that show more than 156 years of services. Forty-four percent of the 400,000 degree-seeking students have attended a traditionally black college.

Those institutions have been meeting social needs, and are necessary contenders if the nation is to achieve a society which determines economic and political or social status. This has always been the cause of the colleges founded by blacks, and thus the state and the nation must address themselves to the problems the black colleges now face and place them in their proper perspective.

According to a report made by the Carnegie Commission on higher education in 1971, it was predicted that the proportion of black youths in the South and in the border states who are going to college is rising rapidly. As a result of this, the black colleges will be counted on to supply many of the additional spaces. Their aggregate enrollment may at least double from the current 150,000 to 350,000 by the year 2000. Consequently, the problems of the black colleges will be highly compounded.

As I mentioned earlier, some of the things that are going on as it relates to black colleges are changing so radically and drastically. I want to bring to your attention some changes and some things that I think you should be familiar with. A great deal of dialogue and a great deal of discussion have been given to compliance plans that have been submitted by many of the Southern states. The news media have focused on these plans, and in many instances, a great deal of discussion has been centered on the black colleges. In too many instances, it is becoming the total focal point, as if the burden of proof and the burden of dismantling are going to rest with the black colleges. And I just want to share with you a statement from HEW in reference to compliance plans that have been submitted by various states. And I quote under the section called "Burden and Impact": "An acceptable plan must provide for desegregation of the unified system of all the institutions concurred in the June 7th submission. It must be specific, both as to objective and processes, and each action of the plan must be set forth in great detail. The plan and its implementation may not place a greater burden on black as compared to white students, faculty or staff in any aspect of the educational process. Such burdens include denial to students of course offerings, financial aid or other benefits, and denial to faculty

and staff of equal salaries, benefits and seniority rights. The closing or downgrading of our historical black institutions in connection with desegregation would create a presumption that a greater burden is being placed on the black students and faculty in these colleges."

I want to quote another section of that report. "The role of each historically black institution is effectively contrasted with those of neighboring historically white ones. But the limited breadth and variety of black colleges' curricula indicate that those programs will remain insufficient to attract a significant number of white students. Program duplication between neighboring historically white institutions is expensive. Within areas of duplication, the white institution generally offers broad programs, while the black institution offers only limited opportunities. The white institutions also offer programs unique to their geographic regions, and are likely to attract students for economic reasons far more frequently than the black institutions. While many of these unique programs have been developed in the white institutions, only within the past three years have the major programs in the black schools been concentrated in non-traditional fields."

I say this to you and read this portion of it because I think it should serve as a motivating factor and a kind of incentive for the kinds of things you want to do in this next two and a half day conference. I am sure that as you move back to your respective institutions, a great deal of support and input are going to have to come from the persons sitting here in preparing the game plan as it relates especially to your institution.

You couple this problem of black college survival with this generation of youth; that is to say, today's youth is at the least exciting, and it certainly does not make parenthood any bore. Every generation has been a matter of concern to the other. But the attention being showered on youth today is unparalled. It is not, however, mysterious.

We are living in a time where no transistor or tape is immune to high volume rock and roll. No street free of an automobile. We see the elephant legged pants; the hot pants; the dashiki; the long hair, male and female alike; and afro styles being accepted thoughout the world. They have even created their own vocabulary with expressions like "right on," "do my thing," "funky," "Super Fly," "get down". They are asking questions that have never been asked before. They are asking,

"IS GOD DEAD? Why not an abortion? What is wrong with premarital sex?" Their generation is running the 9.1 hundred, sending robots to the moon, and dancing the robot on the ground. And if she or he has not used drugs or taken the pill, they know someone who is. They know more science now than my generation did at the completion of college. I always remember the poem shared with me a few years ago by one of my colleagues about the first grader who wrote the poem that read:

> Twinkle, twinkle little star
> I know exactly who you are.
> I know your volume
> I know your mass.
> You are nothing but a ball of helium gas.

Of course, I could also cite the story of the young first grader who was given a note by the teacher to take to his principal. And as he skipped excitingly down the hall, he turned the corner, slipped and fell. Almost immediately, the principal came along, picked him up, dusted him off and in trying to be a friend, subsequently said, "Now, big boys do not cry."

The boy replied, "Baby, I am not about to cry. I am trying to determine whether or not to sue."

Because of these facts alone, I think that we need an instant game plan for higher education for this nation. In pace with the world, which is indeed fast; where speed dominates the action, an undeveloped people need a plan and a program for developing. Higher education is a must for a group that is still basically first-generation college people.

This country is not ready, in my opinion, to make a firm commitment to provide higher education for blacks. A Marshall plan for blacks similar to what America did for Europe in World War II is not in the making. In the next decade, the magnitude of the number needed to give black American equity in higher education, makes predominantly black colleges indispensable. They are a source of spaces unlikely to be found elsewhere with the increasing competition of college spaces among whites. What must we do? What is the game plan?

The thoughts that follow are probably only a few of the plays necessary for a successful game plan. Decisions are now being made at

all levels of government concerning how our nation's expanding system of higher education can move effectively to meet the demands of a technological society.

You must become a part of that decision-making group. For these schools have reached out into the cotton fields of the Mississippi Delta, the tobacco fields of North Carolina, the red clay hills of Georgia, the prairies of Texas, and have brought them in. By the end of the 40's, 80 to 90 percent of all blacks who had graduated from college had received an education at black institutions in the Southern states.

There is hardly a black leader in America today who does not owe his education to his black college. Those who ask what the black man has done for himself should consider the achievements of the black colleges. Regardless of what people say about the inferior black schools, the poor graduate programs and so forth, do not believe it. These persons are of a select group. Look at yourselves and look at the ones who have gone before you. Look at the list of outstanding black leaders and you will have to admit that in spite of their difficulties, in spite of their handicaps, and in spite of their so-called weaknesses, they are meeting the challenges in preparing students for today's highly competitive and boisterous world.

The elimination of discrimination in higher education—especially public education—and the guarantee of equal opportunity will require commitments from a number of persons with various decision-making power. A high level of input from racial minorities is essential to assure that the dismantling of a dual system fulfills their constitutional rights and serves their needs. The plan must overcome the effects of past discrimination and prevent the emergence of new patterns of racial segregation.

Please be reminded that diversity is an accepted value in higher education. A unitary system does not necessarily mean uniformity. In a pluralistic society, tax-supported education institutions, especially, have an obligation to reflect the contributions of our racial and cultural groups.

You may cry, "Why lecture me about the needs of the black colleges? I am a graduate. I am even working at a black institution."

I am ashamed to say that sometimes our actions go to the contrary. We, too, have on many occasions, behaved as if a black college is second-class citizenship. We, too, often spend too much time

apologizing for our black experience. I urge each and every one of you to pick and carry proudly this banner of experience.

I am thankful that during my tenure as president of Mississippi Valley State College, I have seen the young lady who gets off the bus one mile from our campus and walks proudly across the highway to a home with an outhouse in the back. This young lady will help break that vicious cycle. I have seen mama come with her son, an admission slip and financial aid awards, with a wet dream in her eye and say, "Take care. Give him an education."

You have to see twenty-one people living in a three-bedroom home when the postman comes with a letter containing an admission slip and financial aid award addressed to their oldest child. Those are the people that must have access to higher education. The black college must be geared to teach those individuals not only how to make a living, but also how to live. And, believe me, this may not be you nor I in the example cited, but be assured it is our problem.

Each and all of us must develop in our minds and in our hearts the new commitment to these institutions. The commitment requires no formal training or college degree. It is a challenge that will face us all sooner or later. The commitment comes in all sizes, forms and shapes. It may be support. I always say I cannot tell you what the commitment is. It is just like love. I cannot describe it to you, but you will know it when it hits you.

It is no accident that from the black colleges have come the vast majority of Negro leaders in this country. If you take the number of products produced by these institutions and divide them by the resources the school had at its disposal, you would see a warm, live, walking miracle. We must zero in on getting a commitment from the nation to provide higher education to its most significant minority. The country can do this if it so desires.

Precedents have already been established. A commitment was made many years ago to the Land-Grant Institutions calling for perpetual and continuous support by the Federal Government for these schools.

Another factor in the survival of the black colleges is that the game plan must not include a system of selected admissions. Cutoff scores on the American College Tests cannot be tolerated as a criterion for admission. The motivation that a black youngster has, supersedes

any score that he can make or will make on a standardized examination: I must cite the following story to further dramatize this point. The story goes that a first grade black pupil was taking an examination that included a typical house floor plan. He was to match certain rooms of the house with certain daily functions. One example was, "Where do I sleep?"

On three occasions, the youngster checked the kitchen as a sleeping site. The white teacher who was in charge of the first grade went back to the chart on two or three occasions to try to get him to change his answer. And the young man insisted on his answer. And on subsequent analyses, the teacher found out that the young boy occupied a home which had 3 rooms and 21 occupants. Someone indeed had to sleep in the kitchen.

The relevance of this young boy's story shows that many youngsters typically do not know about events beyond their immediate environment. They do not understand contemporary culture. Consequently, they do not have a basic historical frame of reference.

Courses in general education were, therefore, designed primarily for enrichment, and for giving the student knowledge of the world and his own society. Students are varied and complex enough, unfortunately, without defining new classifications, particularly when the classifications are not too well defined.

The real meaning of higher education lies in performance rather than in test scores. It is the ability to promote and induce improvement in its students. Our theme at the Valley is "Let us not be concerned about whom we take in, but be concerned about whom we turn out." If we stimulate and provide the opportunity for our students to acquire excellent learning skills, to raise the level of his intellectual understanding, to learn how to live effectively, and how to get the best out of his potential, the college has accomplished its mission.

The student with the 15 or 20 ACT or above the normal SCAT score could get into any school. The real challenge rests with students who cannot make a so-called acceptable score. These schools are in many instances, turning out students not much better than the ones they admitted. There are glaring figures of success, to be sure, but very little of the degrees shows development.

My final point that contributes to the survival of the black colleges has to do with student financial assistance. The burden of student

financial assistance is tremendous. The continuous but expanding need for financial needs cannot be overstated. At our college during this present school year, we have more than 300 individuals that we could not accommodate to any measure with financial assistance. Almost three-fourths of these students are not at any institution of higher learning at the present time.

This point is very necessary because admission and financial aid in our schools are like sin and confession; you cannot have one without the other. We have heard a great deal of rhetoric, or so-called positive rhetoric, from the federal government on their support for black colleges, but it actually seems to be contradictory. They refuse to support a strong financial aid program. It is the story of someone painting your house while another individual pulls the bricks from the foundation.

These are some of the areas where the offensive game plan must attack. I have intentionally not mentioned other points of attack, for they have been cited on many occasions. I refer specifically to the credibility of black colleges within the black community, control of black colleges, the expansion of educational options within the academic curricula of our institutions, and community involvement must all make up the game plan.

Within each young mind is a hidden flower which must be developed, and which must be made to bloom. The young people of this generation have great potentials and a dream of a great future. They do not want to be a success for they think they are one already. These people will build homes on the moon, they will live until 85 or 100 years of age, cure cancer, be my teacher, my minister, my defender, my fate, and possibly my destiny.

My parents had to worry about whether or not I would get drunk at a dance, break the curfew, and get suspended from college. You and I as parents and concerned citizens will have to worry about whether our sons and daughters will get lost or cutoff from the world before he or she knows what life is all about. The time is here when we must support and take care of each other. It is imperative that we support and defend all of our institutional bases. We must stay on the case. Always remember: God gave us two ends; one to sit on and one to use. Heads you win, tails you lose.

Discussion

Question: Dr. Boykins, I raise this to any person who may wish to respond, and certainly you are one of those stalwart persons. We do hear a lot about the credibility of historically black institutions. I am not sure what the credibility of historically black institutions means. I wonder if there is a mood in the educational community for us to put more specific meaning on this credibility. What are the components of this supposedly lack of credibility? Credibility on what scores? I would like some specific definitions.

Dr. Boykins: I do not know how specific I can be. But I think that in order to respond to that, you have to take into consideration the evolution of the black institution. Maybe I should say the birth as well as the evolution of the black colleges themselves. They were created in order to initiate a system. So this reduces, possibly, the credibility from the very beginning. Of course, during its evolution and during its growth, in spite of all the things that they were able to accomplish, black persons themselves invariably looked upon them as being second class or second rate. I think that much of this is due to the fact that we, first of all, were not visible for many reasons. We did not have much visibility because in some cases, by virtue of our location, we were very rurally located. With the kinds of curricular offerings that we had, we could not have the image in the so-called traditional academic sections we searched for. As an example, we were not contributing consultants in large numbers. So consequently, we did not have imagery or visibility. I think we have been doing a whale of a job. It is just that nobody knew anything about it. Now that we are beginning to focus on this issue and are trying to get more visibility, our image is consequently enhanced. This is not only a job of the institutions, but this is one of the things we are advocating in our state as it relates to the public colleges. The public officials themselves can save these institutions if they want to. One of the things is a kind of endorsement, so to speak, of these institutions. When I say endorsement, do not just say "save them." Next time when a program or a school of environmental studies is found needed in this state, assign it to one of the black institutions.

If the school of veterinary medicine comes into being, it can go to some of these schools. These are the kinds of things that I think we

need now. Everybody knows where we are and knows some of the products we produce, but I think we have to go to the nuts and bolts now.

Following up on this credibility, and looking at four newspapers, The Atlanta Constitution, The Washington Post, The Black World, and The Jackson Daily News, it appears that the people who read these papers would get the impression from the black colleges that the solution to the problem is to perhaps close the black college. I think from the information that we see in the paper, it is apparent that the papers have received their impressions from some letter source.

The omissions are the things that I am concerned about, and I am wondering if it is not the responsibility of the black presidents to make known to the news media what is entailed in the letter. I think that public opinion is very important, and apparently this is not coming across. And I have not heard yet a black president speak out as to what is missing and what is there.

Comment: But I am concerned about the omission. You mentioned just one of them in your remarks today. I think this would perhaps enhance credibility.

Dr. Boykins: Perhaps this is going to have to be the next step. I know, in my case, I was reluctant to respond, and that is because of all the information that was coming through the press, and nobody had anything official. Like I say, once we got this official document, now you know what the position is. I think this does not minimize the point that you make: that is, the urge to respond now and try to tell the different viewpoints. Because there is more in addition to what is just on the front page.

The *Times-Picayune* this morning showed that the governor said he was going to turn down all financial aid in order for Grambling College to remain open. But you see again, it creates the kind of thing that, if we can get the black colleges out of our hair the problem is solved, and that is not it. I really think that they may want to close them down for a different reason.

Comment: I think the whole issue of credibility is complicated. I know that at my institution when we are admitting people to graduate school, credibility (or the lack of credibility) is fostered by the white institutions, which, on the large part, they look at whether or not an "A" earned by a student from a black school is equivalent to an "A" at

another school. When this kind of thing gets pervasive, it tends to undermine the black colleges. I think, as you said, someone -- maybe a president of a black college -- has to tell it like it is: that white racism at the predominantly white institutions does make the black students feel that their degrees are not as salable. And that is something that has to be confronted.

Dr. Boykins: I think you raised a good point here. You know certain cooperative efforts that black institutions have made with so-called mainstream colleges has sort of fostered that same kind of thing, too. Just recently, we initiated a corps development with certain mainstream institutions, and this is one of the main things we talked about for an entire morning. It was not going to be any kind of "Big Brother, Little Brother" kind of thing. It is that we felt we could teach you a few things, too. I think now that they see we can. I always felt that we were special for something, if it were not for anything but teaching the disadvantaged. If anyone knows anything about that, we do. But, of course, they are looking for this kind of expertise.

Comment: I would just like to say something, and be a little naive about that visibility problem. I assume we have too much of it. I was just going to follow this lady's point a little further. I feel many times criteria by which we are judged are lopsided, and I think this is apparent on every black college campus. One of the things that occurs to me is that we have not had the financial backing to get in and do the type of research that would produce other criteria. We are pressured to accept the fact that the thing we need to admit our students is by the SAT or SCAT score and we know that these things are very culturally biased. So we are going to have to move into this area somehow to produce some sort of measuring rod to effectively measure the ability and capability of the students.

Dr. Boykins: This is the reason why I said that if some method, like the educational process, does not lend itself to this kind of qualitative or quantitative evaluation, we could make a mistake. However, I think we all know the fact that if we take the number of products we have produced, and underline this with the amount of facilities that have gone into these institutions, we see a miracle has come out. Of course, there is no way of putting this down in terms of the traditional admission criteria for a graduate or professional school.

We must constantly focus on the kinds of products that we turn out. If you just look in the audience here itself, probably the majority of you came from black institutions.

Question: I want to comment on the statement of Dr. Cross that the prestigious white institutions might question the A's from our school. Since most of our college presidents and our faculty who hold Ph.D's and Masters degrees are from their schools, are they saying that we turn out more inferior products than theirs? Just what are they saying?

Dr. Boykins: They probably say that they have made something out of you.

Comment: But then those same people want to make something out of the students.

Question: Dr. Boykins, I think that we are just making quite a few explanations after the fact. Now, until recently, we as black people had to be a product of the state system. So we should not make any apologies. And as the young lady over there said, most of us who have advanced degrees had to go to the predominantly best white schools because we could not go to the Southern white schools. So we had to stop thinking that whenever we get to the point where we think our degree is as important as anybody else's degree, and where we have to teach 15 and 16 and 20 hours: whereas, many of them just write books and do not have to teach at all. We have to stop that, so we can get this good self-image in ourselves. Only then will it be transmitted to our schools. I think that is where the point is. We must stop trying to explain something after the fact.

I would like to address myself to a statement you made: that we should not be concerned about the type of student we take, but be concerned with the type of student we turn out. What is the game plan at Mississippi Valley when you take the student that knows almost no arithmetic, and is almost a functional illiterate?

Dr. Boykins: First of all, I am glad you raised that point because you can have a game plan when you are saying let us not be concerned about who you take in, and be concerned about who you put out. It means that in between, you have to do a number of other things—none traditionally possible kinds of things—to give you a finished product at the end. One of the things that we have gone to, and our whole program sort of focuses around it, is what we describe as an academic

skills parlor. You and I will probably call it a remedial center, but we cannot quite call it that anymore. It is more sophisticated. We have three full-time persons who are in this center. Two of them are primarily devoted to reading and one to speech. This is simply the beginning. Our plan is that any student, either voluntarily or by virtue of our own identification process, can go to that parlor and seek assistance directly from the parlor, or the parlor itself can farm him out into other facets of the college community where he can get the kinds of assistance and development that he is seeking. You would be surprised at the number of faculty members themselves, as well as students, who have volunteered their services in this particular center to work with the students. I think that in order to be most effective in this way, you have to try to create as many one-on-one situations as you possibly can. This is one of the things that we are trying to do. We are constantly trying to refine as well as develop this kind of concept. With an open door admissions policy, you have to have this kind of concept in your plan. Otherwise, it is not going to be effective at all.

Question: In view of the details of the HEW guidelines, what is the roll of numbers?

Dr. Boykins: From what I gather there have been no numbers spelled out in terms of affirmative action steps. In the preliminary examination of the document, I do not think a major emphasis is going to be on numbers as it relates to students. I think it may be numbers as it relates to faculty and staff. But in the document itself, it sort of hints of this – that if any numbers have to be injected into the plan, it is going to be injected at the area of faculty and staff employment. We see that, in terms of attracting students, they too recognize the fact that dealing with the dismantling of public school education – I do not like that term, but that is the term they use – is quite different as it relates to higher education.

In public school education, we simply have to draw some lines and simply say that every student in that particular district attends that particular school. You cannot do that with higher education. So consequently, the real focus is going to be on curricular offerings. I think that is how we can attract students.

Question: I have several questions. I may be naive in this respect, but what do you exactly mean by your open door policy? Do you means you will admit anyone who wants to apply? And then you sift out the applicants?

Dr. Boykins: Let me clarify that point first of all. The state of Mississippi requires that all institutions of higher learning administer a prospective student an American College Test. They let each institution spell out what their cut-off point is. We are talking about a high school graduate who takes the American College Test.

Comment: One of the recommendations you made is that we should try to have another way of evaluating the student instead of the ACT or the SAT tests.

Dr. Boykins: Right.

Question: If you have an open door policy, how do you evaluate the motivation of the student that you want to accept? Do you just let anyone in? Or just how do you evaluate them?

Dr. Boykins: Well, we basically let anyone in within the guidelines that I just described to you. But I do not think we can really evaluate his motivation. We simply have to evaluate his performance and then make adjustments in his game plan. Of course, we have to operate on the premise that he may not finish in four years.

Comment: Now that brings up another question.

Dr. Boykins: It brings up another problem, too. Because he has to be able to afford it financially.

Comment: Right.

Dr. Boykins: We are well aware of that and I have to say that it puts a tremendous amount of strain on our financial aid package. We support many students through summer programs. For an example, we have a program which we call MAP, Motivation And Prepare, where we identify about 2,000 students that probably would not have gone to college. We bring them in during the summer, and sort of subject them to an enrichment program. I mean that we extend classroom walls and take them on travel experiences – somewhat of a post-secondary upward bound kind of thing. These persons themselves are part of the plan, too. In terms of trying to get those people, you just have to evaluate the student on a day to day basis, or a week to week basis, and try to modify his four-year plan or his curriculum plan for that year in order for you to build the best possible product.

Comment: So what you are saying is that if you do not consider the ACT or the SAT, then you will accept anyone and work with that student once he gets to the university.

Dr. Boykins: Right. you evaluate him on the basis of performance. Of course, we now have a lot of students with good SAT scores who do not perform. I think that motivation is such an important factor among black students, and particularly the black students in the area where we are located. It is a real motivating factor. It is not only high in terms of the students themselves, but also with the parents. You see, you are dealing basically with first generation college students. The parents have no concept of what college is all about, other than the fact that it is the best thing for my child. A parent will call me at one o'clock in the morning and say, "Are you the principal?" I reply that I am the principal. "Where is my daughter? I have called the dormitory, and it is one o'clock in the morning, and I do not know where she could be." Well, I could tell her at least twenty places where her daughter could possibly be. But I cannot tell her parent that. It takes me sometimes ten minutes to find the last name of the child she is talking about. It is Mary. She lives in that dormitory. Go down the hall next to the cafeteria, and it is the first room on the corner. That is the way she describes it. The motivation that she has to make this child succeed outweighs any kind of test score.

I think the same kind of thing is instilled in the majority of the students. Sometimes you must help the student find and pull out that kind of motivation. What kind of talk or what kind of experience starts the motivation? It could be many things. It could be because he works so hard up on that farm where he was, that he wants to get away and attend college. You would be surprised at the number of students that want to live in a dormitory. I can understand the reason for that. I think he is better off by virtue of the fact that he lives on campus and consequently, has this kind of exposure. Sometimes in these settings, and I am not just talking about a rural setting, but I am talking about our urban setting, the community surrounding the college is just as foreign at Xavier University as somebody up in Alaska.

Comment: It seems to me that we are moving in a vicious circle here, because we have many faculty members who are going to give a student individual attention in the black colleges right now, but they are suffering financially and we are going to need more money to hire new help.

Dr. Boykins: HEW recognized that. They have recognized that this is needed and put it into their document. They are saying to these

states to put the wherewithall to make that possible. I think they do have something planned in which they can put the money into a fund. Mississippi does not do it. Louisiana does not do it. A number of other states do what is necessary.

That is one of the points I had written down just before I came in. I forgot to mention it, and it is a very off-the-cuff remark, but this becomes an opportune time for the black colleges to get this kind of financial support from the states. Now we are saying, "Look, we have got to improve our curricular offerings, and we have got to do this and do that." Not only do they want a timetable, they want to see how much money we are going to put to this. I think it is a beautiful opportunity as it relates to the public colleges, anyway, to get the kind of support that you just described. You are certainly right – it is the high priority area. We have tried to say this to our legislature and, of course, they turn a deaf ear to that but it is a very live issue that you raised.

Question: Dr. Boykins, I will address this to you. Most of what you said has been addressed to the survival of the state-supported schools. What about the private school that is not state supported, but strictly a private school? I think with the statistics you gave on a number of private schools, we need to work toward helping the survival of these schools. What suggestions does anybody have as to what we should do?

Dr. Boykins: I think that the basic points of the plan itself, has to be made applicable to the private schools. I guess this is by virtue of my own experience.

Question: We have a different problem. For example, when you have a tuition that is three to four thousand dollars a year and the average scholarship you offer is based on scholastic ability, then what do you do? How can you meet the needs of the student?

Dr. Boykins: That is why I said that the financial aid package is so important to survival. Not only in state schools, but also in private schools. You have got to have this because you are out there talking about "save me," and cutting off the heat. Thus, you are in trouble.

Question: You find the student who is economically deprived but has scholastic ability, we can offer him a scholarship and do something for him. But if he has both things against him, there is nothing we can do for him. We have no money to offer him, and

nothing else. How do you break the tradition of the schools over the century, and it has been a century or more, so we can address ourselves to the problem?

Dr. Boykins: I think the only thing we are going to have to do is push for additional financing from the federal government and from private sectors, too. Let me tell you something. One thing we can do is get real support from our alumni. You see, we have not traditionally supported our schools as graduates of these institutions. There has been a lot more of this in the private sector. The alumni of public colleges seem to feel that public colleges do not need this kind of support, and I tell people all the time that we are not tax-supported – we are tax assisted, and those are two different things. For example, a state institution in Mississippi has to generate thirty-two percent of its budget. Most of this comes through student fees. I think that the game plan is going to have to involve more contributions and more assistance from our own people.

Question: I would just like to say something in response to an earlier statement. For the past four or five years the EOG program was fine, but now they are changing all the guidelines; my question is: How do you prevent them from changing the guidelines to such an extent that you do not recognize the program any more?

Comment: I do not often get a chance to mention some things to an audience, and primarily to administrators of the colleges, but one of the many responsibilities we have is to establish a data base—an information base—on the college campuses. This data base will principally serve as policy makers in formulating policy as it would be for the black colleges. I often listen to groups like this and notice the statistics that are thrown out, and I often wonder where they come from. We have at the present time four studies in the field that I think would be of interest to you. One has to do with one of the questions that has surfaced here, and that is the impact of financial aid for the black college students and for the black colleges in general. I do not look at black colleges in terms of private, two-year and four-year. I have to look at them in the aggregate. Financial aid impact has an impact at different levels on these different kinds of institutions. The study will cover the whole range. Another study is the federal bill of support to the black colleges. Many of you will remember last year that the Southern Education Foundation came out with a monograph called

"Small Change," which was a response to the Federal Agency Commission on Education. Many of you saw that report and raised a lot of questions. We will be dealing with that question this year and, hopefully, in subsequent years. Another area is in the area of career education. Many colleges are concerned about the impact of the two-year institution, community and junior colleges that have since cropped up around them. The third area is student talent, which gets at some of the motivational questions that were raised. Some of the other questions in terms of talent involved the quality of the students coming in and their profile when they come out. Now, the data base is terribly important to you, I think. People, like yourselves, are being called to perform these studies. Educational policy usually utilizes these kinds of studies in support of what Dr. Boykins mentioned in terms of state compliance. Last week, I sat in with several federal officers and the Equal Educational Opportunity Convention's Survey of Higher Education which will come this September on your rider of the General Information Survey. They are looking at those areas Dr. Boykins mentioned – faculty, staff and personnel generally. They are looking at these in terms of jobs, whether they are technical or professional or otherwise. They are looking at their degrees and their level of education. They are looking also at the definite distribution of those persons, salary ranges and a breakdown by male and female. Many of you do not see those.

Dr. Boykins: Before it gets too cold, I want to respond to the lady's question. I think she was concerned about how we address this problem of financial aid. I can tell her how we have tried to address it. We, like other colleges, have problems. In the recent package of the minutes of the HEW and AIDP – Advanced Institution Development Program – we included a program which will allow us to admit up to 100 (what we call) under-acheivers. Where we normally would not have admitted them, we provide funds for certain expenses. We are getting assistance from the Ford Foundation to provide scholarships, and we are soliciting other foundations for scholarships not based on academic achievement, but on need and potential. So these are ways we can try to deal with our problem. They may not be successful, but it is an approach.

I tell you another thing, too. In our state the pressure is being brought on the state to initiate programs of financial assistance. We already have a tremendous amount of support from the

private sector. We are talking primarily about student loans here, not outright grants, but this also serves to attack the problem.

Comment: In the state of Georgia recently, the Association of Private Colleges, which includes all private colleges of the Atlanta University system, was most successful in getting the state legislature to pass, and the government to approve, a tuition supplement program for the students who attend private colleges, so that I think you start off with about $500 per year. It is supposed to go up, but this again helps all students, particularly those who have financial problems.

Comment: I think one of the problems of getting more white students to attend black colleges is that we are not adequately selling our black colleges. I think if we got exchange college scholarships with the white schools, for example – Southern University might put out $50,000 in scholarships, mainly for whites and you get LSU to put out $50,000 in scholarships, mainly for blacks. I think you can exchange student scholarships, and it would increase our white population and increase their black population, too. If you can get that much money, you will have an easier way of putting it to use.

Dr. Boykins: I think this is certainly one avenue. I think some institutions already have those kinds of programs in existence. They may not be on as large a scale as you described, but they do have some exchange programs of some kind.

Comment: I noticed there was a sudden silence when reference was made to the fact that we, as graduates of black colleges, have not accepted our responsibility to support those black colleges. And I think that may be where some of that money that we were talking about ought to be coming from. I know I would probably embarrass most of us here if I asked each of you how much you have given to your own black college.

Dr. Boykins: Well, we are taking a recourse in that area.

Comment: A teacher I know regularly sends $25.00 to his school.

Dr. Boykins: You would be surprised at the number of black college graduates who can afford to support us but do not. We found out in our own case that many of our graduates were in prestigious positions and could help us, if for no other reason than to let us know what is happening. That sometimes is the reason that you do not get in on things is because you do not know about it. The only time you know about it is when somebody calls you and says, "Well, we have

some money left over; why not try this." And we get into what is left. I think that we are going to have to make a real effort in trying to instill in our alumni the fact that the alumni organization exists solely for the support of the institution. We, in many cases, have thought of it as a social outlet in addition to what its real responsibilities are. We have a real opportunity to do this because most of our graduates are young—only 23 years old. We feel as though it is an opportunity to sort of mold them into our image and likeness. I think it is still a question of the black graduate of a white graduate university who seems to feel that there is more prestige in making a donation to the white alumni association than to give to Jackson State or Xavier University. I do not have any statistics on that, that would be reliable. I give to the University of Michigan and the students there. I have to give to my hero, man. I cannot give to Xavier.

Some students come out of their schools, particularly as they did in the 60's, very bitter. You know, I was deeply disturbed – and some of you may remember this from last year. We went to a workshop; (I forgot the title of it) there were about six black lawyers from the NAACP Legal Defense Staff who came to this session. We were asking for advice: Did we have any legal recourse as it relates to the black colleges? Their basic thing was that they resented the black colleges and they said they ought to close them down. I thought about this and went back and researched the biographical data on these individuals. All of them came out of black schools in the 60's—the middle or late 60's—and they came out bitter. They really did not understand the story and the changes.

Comment: They were probably on full scholarship too.

Dr. Boykins: Yes. I think that was a very significant statement.

Comment: About commitment: I think you are a very young administrator and apparently you have the kind of commitment that is necessary among administrators. Now, to me it appears that a commitment of your faculty is dependent upon those that administer your school. I find that in a lot of black colleges the administrators from the dean on up are really there for purposes other than serving the school and the students. When you have your big meetings of high administrators, does it ever come into discussion as to what you can do to create an image for the faculty, and consequently, the faculty make an image for the students in the form of commitment

for the college? This is very significant and I think you said in order for a person to be meaningful or serve a meaningful role in a black college, they must have commitment to the cause. Certainly you are not getting paid for it, so you must have commitment. Now, this is very important to me because I find that a lot of those higher than the teaching level do not have that kind of commitment. At least they do not show it.

Dr. Boykins: Well, I think you raised a good point here. It is that the commitment itself has to be within the entire college community.

Comment: Yes.

Dr. Boykins: Of course, I constantly try to preach and try to behave according to that which I think is important.

Comment: You are doing a good job.

Dr. Boykins: My faculty and student body evaluation of my commitment may not be the same, but I think you are certainly right – the fact that this commitment has to be at all levels in order for it to be effective and successful.

This is the reason why I talked about the academic skills parlor. These are voluntary efforts that are put forth by students and by faculty to help other students. This is strictly on a voluntary basis. I think this is sort of representative of the kind of commitment that we have. You must have these kinds of one-on-one situations that represent a commitment. You know, I tell my people that when I was a faculty member, I cherished the opportunity when a student came and spoke to me, or wanted me to advise them. I felt like he had eliminated a heck of a lot of other people by virtue of the fact that he had done that. And of course, I think this is the kind of thing that you just have to keep talking about. You try to keep hammering and you try to give them the fever. We like to think, either we are naive or maybe stupid, that at our institution a lot of people themselves have that real commitment to these things. You know when we talk about it, some members of my student body have said, "What can you do for my black brothers and sisters at the school across the street." There is the problem. We are sitting in it, and these are the kinds of things that we are going to have to focus on.

Comment: I would like to respond to this question about financing from the private sectors. Although I represent a public institution, this is my first experience with one. In the private sector, one of the fears we had was that, if you get into public monies, you can

become subject to public policy. Of course, one of the blessings of higher education is that the private sector can do what they want to whenever they want to. I think if we will study and look into it, more and more of our private institutions are pressuring and receiving unrestricted monies from state governments for general operating expenses. I think that if the private sector in each state would get together and begin to pressure their state governments for this type of help, they would do what many of the white schools have already done, especially on the West Coast.

Tuskegee is one black school which has gotten it in Alabama. Just two more points and I will be quiet. One point concerns what may be done in private sectors. In that letter that you have, it is suggested and strongly recommended that there be a lay committee made up of people throughout the state to help establish a state plan. I think that before we get carried away with scholarships and that sort of thing, we should make sure that the private sector also gets their part in proportion to the number of students that they would have.

Second point. I do not think we should get so caught up in how many black students we should have and how many white students we should have. I went on record yesterday in Mississippi and asked for all educational processes at college level, be it Jackson State College or whatever, that were operating in the city of Jackson be under our control. Now you may think that is being stupid and naive, but that is the kind of thing we are demanding now. So do not get caught up in the game of "let us see how many students we have in order to get a certain ratio." Let us get things that will last beyond this level.

Dr. Boykins: We have a Waste Water Program with 30 people in it and all of them white. Here again, that is what you have to have. Not only is that good for the Waste Water Program, but for the image of the entire college. They begin to take a new viewpoint as it relates to the institution. One of the earlier problems from where I sit, is the transition of a student from a black college to a predominantly white one. There are difficulties in making this transition. I think it goes beyond just an evaluation of grades. It is a whole change of environment. What could be done to alleviate this? The individualized education that we talk about as being so necessary at black schools or any school where you have students that need help, has to be continued on to the graduate and professional schools. Perhaps some of these

graduate and professional schools could be encouraged to send professors or people who would coordinate programs down to work for a year or two in a black institution – to know the students and to know where they are coming from – so they can get the whole picture, and help to make these transitions a little bit easier.

I think we are going to have to continually try to develop the kind of experience on our campus to get out what we have been talking about. I think another thing, too, is to have real concerted involvement in academic planning with your students. This involvement not only gives us better ideas on how to academically plan, but it helps and is a learning experience for them. It is just not a learning experience here at the school, but there is experience in travel. This is a real factor in terms of trying to develop the kinds of students that we come in contact with. I think we come in contact with a little bit more sophisticated kind of student at private colleges. I may just be talking out of my hat, but I would probably say that 60% of the students at the Valley has never checked into a hotel before.

Comment: I would like to go back to an earlier discussion. I do not think the young lady was requesting a patronizing position for the students that come from black colleges. I think she was simply making a statement that the degrees they bring with them are not recognized the way that they should be – that they immediately feel they are inferior. I certainly would not suggest that you carry over at the graduate or professional level any kind of individualized or patronizing position toward a student that has finished any one of the black colleges. They come to us with negative academics from the secondary level because they are victims of poor states. They take as much as one year or maybe as much as two years to get them in shape. After that second year, you know they can compete and gut it out with the rest of them. By the time they get to Northwestern or wherever, they can cut it just like the rest of them. But what she is objecting to is if a student comes in with a degree from Tuskegee and they say immediately, "Well, I know this student needs to have a little bit of help." Well, they can forget it, because they do not need any help from them. All they need is to be able to prove they can do it. So I would not endorse carrying a tutor along with my student to go to Michigan.

Comment: Let me respond to that. Although I see the problem being posed, I hear it being said that it is not really there.

Comment: It is not there at the level you are talking about.

Comment: But I thought you were saying that these students who come in are not being treated equally.

Comment: No, I never said that. This young lady here said that about the graduate level.

Comment: If this is the case, how do you deal with it? And if it is not the case, then what is the problem? In other words, are they able to compete?

Comment: I was talking about the selection process. At the graduate school when students apply for admission, I heard it and I think everyone has heard it, that admissions officers say, "Well, this person has a straight A average, but I am really not sure if it is a legitimate straight A average." When that kind of thing happens, it does undermine the credibility of black colleges, and students can, as you say, make it. They do not need some kind of Big Brother or somebody to watch them. They need to feel that, when they leave their school, their degree is salable, and they also need support, perhaps, from that institution that says, "Accept my student."

Dr. Boykins: If you read some parts of the *Harvard Classics* it tells where black people came from Jackson, Mississippi – from one room schools–and measured up. So you cannot take specifics. Generally speaking, you and most of the other people who have advanced degrees, have gone to the higher institutions and no questions were asked. So we cannot deal in a specific case.

Comment: Black people did have a tendency to downgrade each other and we need to stop this trend of thinking.

Comment: I have an observation on the financial question that was raised by the person from Hampton. Some of us might find that you have millions of dollars already on your campus. What I mean by that is that you might have some deadwood programs that are taking up a lot of money. Yet, we hang on to those programs because we think in terms of our jobs: "This is my baby, and if I lose this baby I might be gone." However, your baby is using a lot of gas and not putting out any speed. I think that this is one of the purposes of our being here. We want to take another look and see whether or not we have some deadwood programs that are consuming thousands of dollars of our budgets. Coming back to your observation about the state legislature, this is good, but do not ask them for operating money because they are

going to throw the constitution at you. Ask them for student scholarships or things of that type. I think this is what you have been working with in Mississippi with the legislature.

Dr. Boykins: They say "student loan."

Comment: Yes, but do not ask them for operating money. They will throw the constitution at you.

Question: Coming back to the deadwood, you have to have precedents. Dr. Boykins, what have you done at Valley State to cut out some of the deadwood that has been using money?

Comment: Before you comment, I would like to make one remark. I think he is making a rather biased assumption that we have deadwood.

Comment: No, I am asking him because he is the speaker. I would direct my question to the leader of Russia if he were here.

Dr. Boykins: Glad to know that. I may not be answering your question specifically because I think that any program, or anything that you are doing on your campus, has to be constantly evaluated in order to see if the program itself is effective. Certainly you cannot operate on the basis of having a program for the sake of having a program. We have taken this step with some of our programs. We have, in some instances, re-organized the administrative structure of some of these programs. By that I mean we have had some programs themselves that, by virtue of the fact that they were federally supported, were sitting there by themselves. So we felt that anything that is not meeting the needs and objectives of the institution, we do not need. Consequently, we re-vamped the program. We tie in with our college concept. You see, it cannot be over there by itself. I think if you are talking about this kind of th[illegible]e are going to find out if it is deadwood. If it is deadwood, do[illegible]t drop the money – re-vamp the program. I cannot afford to give up any money. I need everything I can get, so that is what we try to do. We try to evaluate, and we have modified. We made some changes, and we are prepared to make some more. Whenever the time presents itself, we evaluate the situation. We evaluate the system of our cooperative education program, and if it is not meeting the students' needs, let us change it. Let us modify it in order that it can perform effectively.

Comment: I did not mean drop the money. I meant this money would be available for something else.

Dr. Boykins: Yes, I think that is what I have in mind, just modifying the program to make it more effective. I think you should be prepared to do that with whatever you are dealing with. One way to help monitor it effectively, sometimes, is to make sure they tie in to your total academic program. That is the way you should be evaluating it anyway.

Comment: I guess we have a few more minutes. May I serve as a devil's advocate? Most of us here would say that we have some type of general education, and you would probably suffer an ego blow to admit that your mind was flabby. So you had general education or basic education at some point. Now, I.S.E. and a lot of other incorporated groups have come along and tried to jolt some of you into believing that a lot is wrong with your education program, generally, and even more is wrong with your general education program over a period of time. You have had a lot of activity. You have had a lot of meetings, a lot of sessions, and a lot of institutes. There has just been a whole proliferation of agencies under TACTICS and a lot of other things. Mr. Speaker and friends, why all of this? Was not it pretty good as it was? Why did we not let each institution remain as it was? Some had survey courses in science and social science and some followed the traditional program. Up until a decade ago, seven or eight years ago, just because somebody could write and somebody was intelligent, they got us all involved. I sort of feel that it is just sort of rocking the boat. Is this the way of getting the money for somebody to just play around with? Why invite our college to get involved in some kind of consortium with Tennessee State, Mississippi Valley and Morehouse? Or Jackson State? What is this Cooperative Academic Planning for? Toward what end?

I said all that to ask the question – cooperative planning toward what end? What is it leading us to? Is it leading us to a fulfilling human being by way of our students? Not black, not white, but just a human being. Because what had happened in the past was not leading to that self-actualizing individual? Is that what it is all about, or is it just a game of actuvity to burn up some calories?

Dr. Boykins: You set the stage for the conference.

Comment: I am going to have to add to your question. Dr. Boykins, you mentioned earlier something about the mainstream of higher education. Now, when we allude to higher education, we talk about developing institutions. Some people talk about trying to get

your institution into the mainstream of higher education. But one never defines what is meant by "mainstream of higher education." My question to you, and to the audience here and maybe this is what Dr. White is also saying, what is this thing we call "mainstream of higher education?" What are the components of "mainstream higher education?" What are we trying to do in this mainstream?

Dr. Boykins: Now, when people ask me about the mainstream, I try to sum it up this way. We are simply trying to fulfill the need of the persons that we are trying to serve. If we fulfill that need, they are in the mainstream, whatever that is. The mainstream for you may not be the same as the mainstream for me and my institution. It means you are fulfilling the needs of the persons you are serving. Once you have turned out that product, they are the stream.

ACADEMIC PLANNING FOR SCIENCE – NATIONAL AND LOCAL

James Mayo

In asking me to speak to you, the directors of CAP charged that I should "sensitize and motivate you to devote serious contemplation to the new/changing role of predominantly black colleges and ways of continually improving capability in academic planning that will help in developing innovative learning environments for the students who matriculate at these colleges.

Consideration in my discussion will be restricted to science as I do three things this morning:

1. Take a cursory look at the national level policy making structure and where the institutions can make input.

2. Take a look at the institutions themselves and their participation in science.

3. Discuss with you your own thoughts on the subject of planning in science in order to converge on a useful real-world conclusion for this exercise.

EXECUTIVE BRANCH

There has been activity lately in restructuring the science advisory apparatus in the Executive Branch.

In 1957, the post of White House Science Advisor was established. This allowed the nation to have a top scientist at the President's elbow. Last October, this post was abolished and the director of the National Science Foundation (NSF) has taken that role as Chairman of the Federal Council for Science and Technology.

Last July the Office of Science and Technology (OST) was phased out of the White House, but on the same day, a new Science and Technology Policy Office was formed at the National Science Foundation. This office will provide support for the NSF director in his post of Science Advisor to the President.

I mention these to recall that there are points of entry to the science policy makers in the executive branch of government.

LEGISLATIVE BRANCH

There is a fifteen member sub-committee of the House, Science and Astronautics committee called the sub-committee on Science, Research and Development. It is responsible for science and technology application and science education. It is also responsible for the authorization of the National Bureau of Standards and the National Science Foundation.

Again this is a reminder that the users of the output of National Policy and Legislation have points of entry into policy and law-making.

The Federal allocation for education training and research take place inside an overall political process. One should know this process and one should know of national objectives and programs if these programs are to be included in the implementation of local objectives.

So much for the non-local considerations.

THE INSTITUTIONS IN THIS PLANNING UNIVERSE

At the local level, we have eighty-six four-year public and private black accredited baccalaureate degree institutions. They are approximately one hundred years old; organized along traditional lines (departments and divisions); giving majors in the Natural and Social Sciences.

There are eighteen to twenty-five public and private associate-degree institutions organized along traditional lines with transfer programs predominating.

For years, interest in science has been on the upsurge. There has been a climate that facilitated the priming of the pumps to increase the flow of scientific manpower and capability. This manpower training was right in line with the business as usual for these institutions. There was special support generated for them.

Recently, the drive in science has diminished . . . What does this mean to these 100 or so institutions? The subject, academic planning for science, becomes how to plan programs for survival when the money is running low.

I do not plan to go into a description of a planning system or a planning scheme or a planning strategy. All of these are in a sense

tactics to solve certain kinds of problems. I do intend to generate a series of questions; to take my own stand on the subject of these questions and join with you in giving answers if they exist or at least make statements about the questions.

First, I would like to present the Haggarty statement, a statement attributed to P.F. Haggarty in a forum on science and public policy, a series of lectures generated by an academician in support of academic science.

The statement is ". . . in the past . . . it was thought that . . . all that was necessary to solve the problems of the education industry was enough money . . . . . spending that has approached three times as much per student (in constant dollars) does not seem to have improved this effectiveness of the system or the quality of the end product."

What if this question were put to the black colleges?

One hundred years ago, these institutions were founded in boxcars, slave masters cabins and rented shacks. Their personnel received no salary and the institutions had no budgets. Today the institutions have operating budgets of *several* million dollars averaging two million for the private institutions and eight million for the public. Twenty-five to thirty percent of the entering students are graduated in four years.

How do you answer this question? *What has money done for the institutions?*

Second, assuming that there is currently a policy of encouraging research, development and technology at the national level . . . what can this mean to these institutions? Can knowing about the latest source of grant funds help? If a grant is obtained, can the institution use it? To assume that any grant from any source is INCOME is to assume UNRESTRICTED use of grant funds. It never happens. To determine what does happen, let us look at the model of the research university . . . say an institution in the group that receives ninety percent of research support funds.

The university generates new knowledge; it is heavily committed to research, the bulwark of graduate education; its business is research and its expenditures are mainly to this end. It would readily spend two dollars of institution money to one dollar of grant funds to do the job it must do anyway.

On the other hand, the college transmits and maintains knowledge. It is committed to teaching scholarship. It can ill-afford to mis-direct its resources. This brings up the question of the conflict between research and teaching. No one would argue that the performance of research is of no value to society. There are arguments that faculty involvement in research can result in less concern for the student as an individual. I take neither position on this question; I just raise it.

There are arguments raised about the activity as a career interest of the faculty member as distinct from the educational interest of the student. Questions like these are considered in the research institutions. They are considered with even more intensity in the teaching institutions.

In the graduate institution, there is a close relationship between research and learning opportunity. In the undergraduate institution, the claim is that this is a diversion of manpower and other resources. There is the claim that teaching and research go hand in hand. It is rather obvious that the origin of this statement lies in the frontiers of knowledge; it is the basis of research and teaching and the transmission of knowledge.

Pushing the analogy will show that the baccalaureate institution is not like the graduate institutions. Because of this, the four-year institution has fewer options.

Third, it has been said that changes in educational policy and practices are not normally initiated within the educational system. I understand that overcoming this is a goal of the academic planners. External pressures, court decisions, demographics, Sputnik and the war-on-poverty have had more effect on educational practices than any seminars or studies of professional educators.

Strange, is it not? Not one decision by professional educators has caused as much change in science as the launching of an earth satellite.

You would like to know what options are left to the institutions. Some have said that in time of decreasing support and decreasing enrollment, the institutions can cooperate. (CAP is one example.)

What possible cooperative arrangements can be made?

CONSORTIAL AND COOPERATIVE INTERINSTITUTIONAL PROGRAMS

Consortia are formed to accomplish things that would be impossible and at the least difficult for a single institution. Incentives include new capabilities, economic advantages and over leverage. The nature of a cooperative operation constrains the possible activities. For purposes of discussion, consider two classes of activity from the geographical frame of reference, remote and local. A local cooperative exists when the schools are close enough to allow convenient access between campuses. They can be separated up to 90 miles away (about one and one-half hour travel time). Remote cooperation exists when the travel time is too long for the stay time. Intermediate must be something in between. What are the limiting dimensions on such arrangements? What defines other types of classes of cooperative arrangements?

In levels of aggregations there are programs involving the entire institution, departments or individuals.

What activities can be undertaken in cooperative arrangements?

Physical plant	—	local
Libraries	—	local and remote
Sponsored research	—	local and remote
Instruction and course exchange	—	local (faculty)
Pooling of courses	—	intermediate
Service or Counseling Centers	—	remote

Planning systems are based on the assumption or presumption that resources are infinite. You sum over the allocations (ΣA_i); you sum over the particular activity (Σa_j); and you sum over the time (Σt_R) over which it is going to be used, and generally these are infinite sums. While in reality, no such thing exists. You do not have a choice of all possible allocations, so this is why we are not going to discuss that.

Let us ask some questions about things that do not exist with this presumption: whatever you decide to do that is based on projection and refinement of current programs or current activities, assume that this is *totally inadequate* to meet the challenges that lie ahead. If you believe that, then there is nothing that I can tell you that will

prepare us for the future. However, I would like to raise a couple of questions of the type that might have bearing on this.

One of these is, *what about new ways of looking at things rather than the traditional*? Our institutions are now structured in the traditional fashion. I talked to a folklorist who has done some things that are different. He uses computers in a non-traditional manner. He does what he calls "choreometrics" and "cantometrics."

He has a way of measuring the way people move. In "cantometircs," he measures the range and the structure of the way people talk. He has been able to trace, according to him, certain types of ethnic structure that have raised questions in anthropology. He has been able to trace ethnic currents through all parts of the world according to his metric measures that are different from the traditional metric measures. He can show, for instance, that there are certain ranges of loudness that different ethnic groups use. There is a correlation of sound levels to whatever you define as different ethnic groups.

These studies are a way of allowing people in various cultures to know more about themselves, and to know that the things they do are normal and normative.

These are measures that have not been done any other way. I mention that because there are other types of things that were done fifty years ago or so when people like Einstein, who upset the applecart in physics, ran into some other new people who were also upsetting the applecart in physics, like Schroedinger, and thought they were jokers.

In "choreometrics," for instance, you might know that the ballet is an art form that has been passed down without a symbolic transmission system. It has not had a symbolic transmission system until lately. There are very difficult symbolic systems that people can learn that tell them how to do a particular movement in ballet. "Choreometrics," supposedly, allowed people to determine the differences in the way people move, and to allow students, for instance, to just go out and look at groups of individuals, possibly in a social group, make observations and take data.

I want to at least raise this as a question of things that are on the other side of the line: that is, on the other side of the traditional line. What about consideration of quantitative studies? People often tell me that I must have been good in mathematics because I am a physicist. Mathematics is, after all, the language of physics and natural science.

They do not really know, however, how this came to pass. That was a painful step-by-step marriage of what you call the real world and mathematics. It did not come naturally. It turns out that there are properties, for instance, of the set of natural numbers. If you have a number one and a number two and you take an operation like adding them, that is pretty much the same as what happens if you take a one-pound rock and a two-pound rock and you can somehow get a quantity that tells you something about the combined weights of these rocks and how this rock's behavior is just like the addition of the numbers. We can generate this isomorphism in much more complex fashion, but that still is exactly what happens in the number system. People feel that the ultimate in reality is to get everything measured in a number system of this sort, and that is not possible. That means that if we are waiting for everything to be done in a strictly quantitative and rigorous fashion, we will be pretty far behind. So, what about things like Centers for Quantitative Studies right now, where people can do all sorts of things that deal with quantities rather than specifically mathematics or the analytical mathematics in all of these fields.

Quantitative studies, I say, because there is more than the traditional means of looking at things quantitatively. I could list more questions, but I thought that maybe the series of questions might give us a starting point and I would like more to interact with the audience in a discussion along any of the roads that these questions may lead us.

At this point, I would like to ask if you would like to comment on any of the questions that I raised or I will take a question and we will go from there.

Discussion

Question: What about structuring a science course that is interdisciplinary, not intertwined with different sciences but courses such as an art or music major taking a science course such as chemistry or physics that will directly relate to his art or music major. A group of teachers at my school have been talking about this.

We do not know if it has been practiced at many other schools. We are interested in knowing that. A student in voice might take a biology course that directly relates to the whole principle of singing and of course, he does have to learn about the whole body including the

muscular system. But what about just developing science courses that are interdisciplinary with humanities? Do you think that, possibly, you could do this in a lot of schools? I observe students emphasizing humanities a great deal, and I think it is because of science. When we were on this phase toward competing with other countries, students found that there was somewhat of a loss of the humanistic touch, but now they are becoming much more interested in the humanities. Perhaps we could intertwine the two. Has this been done at other schools or is it being done anywhere?

Dr. Mayo: That is a long, complicated question. Well, sometimes people say, "Why not marry these two disciplines?" What they mean, in some cases, is that they use the words that are used in one discipline, and they will use the words that are used in another discipline; they add the two algebraically, and that means that rather than having one vocabulary, you now have two vocabularies, or one vocabulary with twice as many words in it. Do you understand what I am saying?

Comment: Yes, I understand what you are saying.

Dr. Mayo: It is possible to do what you said, but it would require first, I think, a radical look at the way we accept the disciplines as they now exist. For some reason, people do not believe that physics is just a way of looking at things, and that music, although it involves skill, is also a way of looking at things. A psychologist has a particular perspective on things. There are a multitude of things that, once you define these disciplines, become social institutions. You know, of course, what happens to the social institutions. Everything that happens to one social institution happens to any social institutions. Once there is a discipline, there are many things you have to do. For instance, what do you have to know about anatomy or physiology to be able to sing?

Comment: A great deal. First of all, in singing, your entire body takes part in it. You have to know about your muscular system, about your heart, the anatomy of your voice, and how the voice is produced. You have to know quite a bit about physiology, as a matter of fact. Singing does not just involve opening your mouth and letting out a note. It involves your entire physical and mental being. So if the student knows more, he may learn better. I am a voice teacher. I spend much of my time in my lessons just talking to a student about how his muscles play such a strong part in singing. They apparently never thought about this before. I do not know if science teachers think

about that as such. It seems to me that the two disciplines could be put together so that a student can readily see the relationship of the two.

In science courses, you appear to take so many hours and completely separate things from what I am doing in the humanities, and it does not have to be separated. Because of this idea of separateness, we see science as a means of getting ahead and as a means of competition with other schools and other countries. It appears to me to be an inhumanistic approach to things and we need to combine the two to show that they can work together.

Dr. Mayo: What do you have to know about anatomy and pysiology to sing?

Question: You want specifics?

Dr. Mayo: Yes.

Comment: The student does have a need to know his muscular structure, particularly in the abdominal area.

Dr. Mayo: Many times I have a bad habit, and that habit is I do not wait until people finish what they say before I stop them. It is not because I am psychic in the sense of knowing what they are going to say. I think I do it for the following reason: when you make a statement, you have a premise. If you have a premise, and if you make a second statement based on that premise, that means you have established a logical chain of thought. The rules of logic then suggest that you have to come out with certain conclusions and when I spot a flaw in your premise, I will stop you. Because, if I allow you to follow your argument out to the end, and then stop you, that makes people mad. I could stop you now because I have spotted a hole in your premise.

Comment: Go on. Let us clear up the hole in the premise.

Dr. Mayo: Let me try to give one example. Let us suppose you were speaking a language that had retroflex initials. Now there are initials in speech and there are finals in speech. Suppose you wanted to be able to say "drone". Can you listen to that and tell how to do it?

Comment: Say it again.

Dr. Mayo: "Drone". Now, if it is necessary to tell a student exactly what muscles he is going to use to do something, then I could see its point. But I think the hole in the premise is that the knowledge about muscles is the important thing. The thing I want to bring out is that this bank of knowledge is not worth a dime.

Comment: I am not saying that you have to be extremely specific. May I interrupt you?

Dr. Mayo: Sure you may interrupt me, but specifics are not what I am arguing against. I see already that you have missed my point. The point I am making is how does a scientist look at music; how does a scientist look at anything? It does not matter what he is looking at. It is important to know certain things about the body, but if you were talking about anatomy as a process, it seems to me that there is an anatomy of music.

Comment: Right.

Dr. Mayo: You may recall from the movie that there is an anatomy of a murder and I am sure you could find certain invariants in looking at things from an anatomical point of view. You can also look at taxonomies of things.

You can look at things that are equivalent to a physiological process. I mean if something were a body, what would be the equivalent to the physiological processes? A mathematician might look at music and say, "Well, how do you combine the frequencies and the notes". There are certain melodies and there are always certain kinds of ways you do melodies. There are certain rules of combination for these. There is harmony. There are rules of combination for harmony. In fact, in current day theory, there are journal articles showing what possible combinations there can be. Done by a computer, one may examine all the possible combinations; one may discuss the different tonal forms and scales. So that it is not that the student will have to know the language of another field, but he would have to know what these people in the field do. When a mathematician makes a graph, he wants to know if there is anything about the way these things add that can be abstracted. That is what the mathematician does. He is not really interested in the substance; he is interested in a new way of looking at things.

Let us suppose, for example, that you wanted to decide how you were going to seat people in the classroom. The one thing you could do is to physically switch them around. A mathematician would say, "Oh, that operation is permutation. If that is permutation, then it reminds me of a group, a group called the symmetric group, which involves just substituting one number for another." I can associate your seating plan with a symmetric group by sticking numbers on everybody's back and

then having them switch places. But I already know everything about what will happen. This is the mathematician's point of view. One has to know those rigorous things that are part of the discipline, and those other things are only, as they say, in law – *the dicta* – things that just happen to come along with the decision.

Comment: I agree. But I am not thinking that a science teacher has to know exactly what happens in the body when a person sings or something like that. I do not think you have to be that specific, but I think perhaps you should have science courses geared toward general information about the body.

Dr. Mayo: I agree. For instance, let us suppose you could teach a student that there is a way of breathing that helps in singing. Now, whether people can sing or not, it does not matter. But then if he goes into a laboratory, you could take a music student and consider what you are telling him, why should he believe it? He cannot measure it. Why should you believe that the world is round? The same reason that you should not belive the world is round is the reason your student should not believe that breathing has anything to do with his singing.

Everywhere you go outside of this room, you see evidence that indicates the world is flat. There is nothing except faith that you can give your student that will prove the things you tell him which will affect his singing. You can take a music student into a laboratory, have him do certain kinds of exercise, establish some background data about the power of his singing in terms of range and loudness, you can have him do exercises, come back into the laboratory, and measure it with an audiometer, and only then can you back up the things you say. Of course, you may find that things go both ways.

But, what I am trying to say is: I thoroughly agree with what you say. I just say you have to be careful in making certain premises.

Question: You mentioned earlier in the presentation something about science policy, and you pointed out some realizations at the top. I see NSF as becoming something of a policy maker. For there is a policy, or what have you. Just recently, NSF initiated a minority grant program which would give most of our institutions about $20,000 to get people involved in research. And my question, based on those observations, would be this: How do you perceive the trend in the sciences, which may be with us for the next three, four or five years, or have you projected that far ahead?

Dr. Mayo: First of all, let me make it perfectly clear that NSF, on the one hand, is the same organization that it formerly was. However, the director of NSF now wears two hats. One of these is a science advisor to the President, so he is involved in all of the agencies, including the agency that he heads. It is a funny circumstance so that, on the one hand, he is involved in executive policy, while he is still involved in running the National Science Foundation. I think that what you are referring to is the Minority Institutional Program, this is part of the section that I am involved in. That program has existed for two years. It has expended nine million dollars to the institutions and it also has another five million dollars for this year. It involves both institutional development and research initiation.

There are two types of things to consider: one, the institution can accelerate its development in science once it has committed itself to certain kinds of goals. Over the next five or ten years, the foundation will amortize the cost of that over, maybe, three years. It will not require them to do things that they would not have otherwise done, or could not have otherwise done in any case.

There is another segment which allows the individual faculty members to compete with people who are doing basic research in their own specific discipline. It will provide up to about $20,000 for 15 months in order to initiate the research. After that, the person has to compete in the regular pool.

The General Research Science Support Division and other parts of NSF share some 350 million dollars that are broken up into various budgets. That is where you will have to compete. This Research Initiation is just a one million dollar pool that is available for faculty at the minority institutions, which now include both the native American institutions and the black institutions.

The program is viable, and it appears that it will be viable for the next few years. But it is only viable in so far as it is consistent with national policy. Once a program is brought into existence by a certain kind of policy, it is imperative that the people who are involved with the program know not only about the program, but about the policy which gave rise to the program. When policy is changed, then what happens at the program level changes. Even things like the Higher Education Facilities Act and the Higher Education Acts for the Office

of Education change. Some people are not aware that the public has the opportunity to make input into these change.

Now, once policy gets to the stage of regulations and by the time it gets to be a program, each program officer has to administer it according to the laws that were written. People in higher education need to know that their input is valued. Science and education are governed the same way any other activity is governed: that is, by regular governmental processes.

Comment: You only commented briefly on the long range.

Dr. Mayo: The long range depends on what the President sends as a budget to Congress. For instance, this year they sent a budget to Congress requesting so many dollars. Congress makes authorizations and appropriations and then they get together with the President and decide just what will in fact be done. The legislative branch and the executive branch get together on what the laws are and then the executive branch administers the laws using the Office of Management and Budgets. All of these activities occur before anything happens at the program level where I am. So far, no changes are indicated.

Question: Dr. Mayo, I gathered from the comments you made that you are suggesting some kind of shift from traditional ways of doing things and that new ways may be in order. I am wondering if we could pursue that for a moment. Do you have in mind some kind of shift from the way our institutions are presently organized?

Dr. Mayo: I have seen plans to do that kind of thing, and they seem to offer solutions to the problems that were raised. They change, not along the same lines that we have institutions now, but they have changed themselves to focus on and become commensurate with certain kinds of things in the real world that exist here today and now, and not fifty years ago.

In this particular case, I guess I cannot say because it is, in a sense, proprietary, since I am involved in reading the plans and proposals of other institutions. I certainly say there are institutions that do not hesitate to change the way they are structured. Apparently that is not a bad thing.

Comment: Most of us will probably agree that diversity may be a worthy goal for higher education. You may or may not agree with this. However, I think you did say that most of the schools in the states are developed along traditional lines.

Dr. Mayo: Yes.

Question: When you raised the question about the new versus the traditional, seemingly most of the things that have been done that are new have been nibblings rather than major change.

I am just wondering, as mentioned just a few minutes ago in a question, if you see whether or not there is really going to be some big bites taken rather than the nibbling that has been going on in curricula?

Dr. Mayo: You cannot make change just like that, just by gently suggesting to people, even showing them a model of something that works better or differently. You cannot do it that way. Out of the COSIP D program has evolved a program called a restructuring of the undergraduate learning environment, because they found that you cannot improve an institution by going in and putting some dollars here and there. Three years later, you go in and you do not see it. What they now do is support the cost of change if a school wants to completely restructure its undergraduate environment. In fact, I am sure that if the institutions in this group were to choose to follow that idea in their proposals to the minority institutions, they could be supported. If there were institutions that were attempting a radical restructuring of the undergraduate learning environment, not just as you say for the purposes of receiving the grant. But there are big bites and serious restructuring of the money involved.

Question: What do you see as the role of science courses in the colleges and universities for the non-science majors? Also, if there is a reduction in the amount of money that is coming into these schools, why is there a reduction? Is it because they think these science courses no longer play an important role or is it because they see a changing role? What kind of role do they see?

Dr. Mayo: Well, if you listen to me for a short period of time, I guess I would sound like a traitor to science, insofar as how much I would promote it exclusively. The thing that I think is more important than pushing a particular discipline in science, is pushing rigor in all scholarship. For instance, in the humanities, there are certain types of things that professionals do that students can do. There are discoveries of style that have been made by doing word counts and frequency tables. People put these studies in computers and they do analysis on the counting. It may be interesting to do this analysis on a physics test to see if there is a certain style generated by this subject. And this, to

me, is more of a scientific way of doing things than having them roll balls down inclined plans like Galileo did. If you look at the average person walking down the street and you considered all the sights that never existed in the ancient times, people, by virtue of their interactions with the real world, have more intuitive knowledge of these things than it is necessary to call attention to. If you were in an automobile and a collision was emminent, you would rather have a small mass than a large one behind you. One can always explain the reasons for using science knowledge in facts. Once you have got the fact, then people do not know how to get it anymore. I feel that the most important thing is to do fewer things and to do them with rigor. I mean rigor in every field, not just science.

Now, insofar as the dollars are concerned, I think they are being put somewhere else. Let us take a look at what we are talking about. Why were the dollars flowing to the four-year colleges? Because they are the sources of science manpower. It is strictly a manpower argument. The indication now is that there is too much manpower in science. The resources are therefore reallocated. It was just a matter that you were the prime source in the manpower chain. Now you are not.

Question: Dr. Mayo, in terms of the National Science Foundation, many of us traditionally think about that as being related to science and mathematics. But what are some other kinds of things that the National Science Foundation is engaged in, other than the scientific and mathematical fields?

Dr. Mayo: You mean in the educational directorate?

Comment: Yes.

Dr. Mayo: When we say science, we mean the natural and social sciences. Many social science people for some reason never talked to us because they say, "You never really thought about us before, and you are not really thinking about us now". So now we mean economics, political science, sociology, anthropology, history of science, physics, chemistry and biology.

Comment: You are frightening me now when you use the word science in what you are including. Back in my school, we have a division of pure and applied sciences. You can say it includes the traditional things: nursing, speech and audio pathology, and it sounds to me like everything is getting to be a science.

Dr. Mayo: Certain other modifiers for science were not concerned with the clinical sciences, and in some cases, applied sciences. But mainly not applied. The basic sciences are what the NSF Act of 1950 will cover: purely the basic sciences. They may be pre-requisites for other types of science, but there are other agencies whose specific mission is to concern themselves with some of the clinical and applied sciences.

Question: Dr. Mayo, can we infer then, from what you are saying, that if I were in a behavioral or political science, as you call them, that I should not be, as you say, opposed to that kind of innovative program? Am I correct in saying that?

Comment: You know, I heard that same question asked a couple of years ago, and I was embarrassed by the response. The reason the social sciences are not getting anything is because you are not getting proposals in.

Dr. Mayo: I can give you firm probabilities in only one case, and that is the one hundred percent probability that you will not get a grant if you do not send in the proposal.

Question: Can you cite some examples of cooperative institutional arrangements?

Dr. Mayo: In the minority institution program, there has not been a single one. I may as well say why, because that will probably help.

In the individual institutional program, people ask for equipment, faculty development research, time, and student assistance. Then they get together and they say, "Well, we can send in two proposals for ourselves and what we will do is five of us will get together and ask for some equipment, certain kinds of research time, certain kinds of other hardware, and we will divide it up. So it turns out that, as we were discussing before, for cooperative arrangements there are a peculiar and a finite number of things that you could really do that would add to the efficiency of what you are trying to accomplish. Dividing up hardware is not one of them. So, mainly, the software-type proposals like the curricular development etc., are most probably under the cooperative funding; developing a curriculum so that everybody can use it. And in some cases, faculty development.

So these types of activity, faculty development, courses, software, are probably very good.

Question: Does there seem to be a trend now towards priorities within the disciplines that are included in science in your definition of science? In other words, if schools are applying for money, which seem to be the priorities: Is it in the behavioral sciences, the natural sciences, or just what is it and why?

Dr. Mayo: Well, we do not set any priorities in the Foundation. The institution sets the priorities, and it has to do with those fields which they feel are the most logical steps for them. It turns out that for reasons Dr. Calbert has mentioned, many people avoid talking about the social sciences because they feel that the subject has some taint at NSF and that they have more of a chance with the natural sciences. That is not true at all. If they ignore their social sciences and promote the natural sciences at the expense of the social sciences, then the question will be asked: why? And if they answer it, of course, we have to accept it. But still the question will be asked.

Question: In the graduate schools, most of the problems of social sciences stem from a smaller variety of course offerings. Would you recommend that the undergraduate program in social sciences respond to that by offering more courses in mathematics?

Dr. Mayo: No, I would not recommend that they respond by offering more courses in mathematics. I would recommend that they respond to this by doing more quantitative type work earlier. In addition, probably they should just decide what mathematical courses would be responsible there. Certain contents out of the mathematics courses are needed at these levels, and it is not just a range of mathematics courses set by the mathematics department, ranging up through the calculus. I do not think that is necessarily the way it should be done. That is one way to do it but I would not recommend it.

Question: Dr. Mayo, does the present policy advocate a promotion of the natural sciences at the expense of the humanities?

Dr. Mayo: No.

Question: If I heard you right, and probably I did not, you said that the changes in resources are funds. That can be related to the idea that the science manpower resources seem to be sufficient. Therefore, there is now concern for supplying manpower in other directions. What are those other directions that we talked about? Are they the behavioral sciences?

Dr. Mayo: I did not say that there were no manpower problems. In the other directions, there are things like the energy resources. There are technological areas and scientific areas. It is not a manpower problem when one deals with that. When they were dealing with science and trying to get more scientists, there was a push from the Russians.

Comment: Manpower in the sense of skills, I was talking about.

Dr. Mayo: No, that was not the problem. What I tried to indicate in a very short period of time, was that the pushing power for getting funds into the elementary school curriculum and the high school curriculum and into the four-year colleges, was that we need more scientists and if you do not get them started early, then you will not have them later on. Once that argument was constricted, then the demand for this pool died out. That is all I am saying. There are other problems that are not solved by manpower arguments. This is one problem: the number of engineers and scientists. Four-year colleges are not in the chain. You are not in the production chain for R and D.

Right now, you can read that there is considerable concern about research and development, but this does not involve the four-year institutions. So if there are things that do not involve you, it is up to you to make sure that there is input into the policy-making level. This is the whole point.

Question: But I think it still comes back to what I think people are trying to ask from the behavioral science plan – the people who make the decisions. Have the people who make the decisions developed any kind of appreciation for the need for research and why people behave the way they do?

Dr. Mayo: We have supported millions of dollars in behavioral research. We have a Social System and Human Resource division in the research application division. And they grant millions of dollars but the four-year colleges are not into that either.

Question: You mean that is not the area in which we have been supported?

Dr. Mayo: Well, you have not put in proposals. They have eighty million dollars in applied research.

Comment: That is the same answer that I got a few years ago.

Question: Do you think it will be good for the National Science Foundation to conduct workshops around the country on the art of writing proposals?

Dr. Mayo: We have had them.

Comment: I think most of us are not really familiar with writing proposals.

Dr. Mayo: In fact, most of my trips during this week have been centered on going to institutions just for that purpose. One of the things that most groups do not seem to realize is that writing a proposal for us, the National Science Foundation, is just like writing a freshman essay. First, you have to know what you want to do. Second, you have to know how you want to do it. Then, you just write an essay about it. Some consultants who assist people to write proposals are finding out that this is the best way also. I have seen some good proposals from people who received assistance. When you get a fee requesting consultant to come in, inconsistencies may rise concerning institutional statistics on such matters as student financial aid distribution. It is simply too difficult for a consultant to really know the institution unless he listens to the people there. So our theory is that the proposal does not have to be sophisticated. It is just like a thesis. You have to show that you know how to do it right once. That is all that is required for describing the project. A proposal is not an application form, where you have to fill out all those blanks and then write something down. It has a beginning, a middle, and an end. It should be just as short and simple as that.

Question: Dr. Mayo, fortunately you were on our campus very recently. In the light of your experience there and having heard what our representatives had to say, in your professional judgment, were we on the right track?

Dr. Mayo: You will hear about it when you get home. Do you mind if I leave it at that?

Comment: Our school has been in the business of educating students for a long time, and it will continue to be in that business. It is just a matter of what you do.

Dr. Mayo: Well, I am not sure that I have done what I was charged to do. I hope we can say at least that we have cooperated in discussing some vital issues. I, for one, cannot say that I have brought you all of the answers because I do not have them.

SECTION B.

SEMINARS ON EDUCATIONAL SYSTEMS

A TASK ANALYSIS APPROACH TO HIGHER LEVEL OBJECTIVES AND CRITERION-REFERENCED TESTING

John H. O'Connell

I would like to talk with you about an idea that has been running around for some time in the National Laboratory for Higher Education (the Lab) that I feel shows value for higher education and at the same time calls upon you to participate in an activity that might be the forerunner of a product designed to teach this idea. At the end I would like for you to answer the short questionnaire that you have and tell us what you feel the value of this idea is. The reason behind our request is the fact that we spend most of our time in research and development and only a small part of it in instruction. If I understand my population here, most of you are primarily concerned with—in one way or another—instruction, and you spend a smaller amount of time in research. The idea of the Lab is to try to achieve a mating of these two emphases and the only way that we can do that is to constantly bring the things that we produce to you who are using them, and ask you, "Do we have something here or do we not?" Of course we do not bring it until we feel that we have done our "leg work" and that we do have something to offer.

Let me tell you about a personal bias. I am more committed to behavioral psychology than I am to other forms, such as Gestalt approaches or social/psychological approaches and so on, as far as *instruction* is concerned. My first training in education at the graduate level was as a psychologist and counselor and as a practicing counselor. I tried as hard as I could to really live up to theories that allowed an individual to make his own choices, if that is possible. I certainly worked toward not structuring a person in developing his own personal self—the most important thing in personal development. But when it comes to instruction, in most areas, I lean more toward a behavioral approach and I have some reasons for saying that. Most of them come from consulting work with instructors when we talk about new trends in education and they turn to me and say, "Okay, that is fine. I might or might not agree with it; but if I do, how do I get it done?" I find myself then more and more trying to work toward products or ways

and techniques of helping people get the job done, because eventually when all of the theorizing is done, and all of the psychological sets have been honored and all of the philosophy has been worked through, an instructor has to walk into a classroom and *do* something. Now, that is the part that interests me and that is the kind of thing that I would like to approach tonight. Designing specific activities does not violate personal freedom.

School Instruction Model

What I have here is a set of four circles (See Figure 1) and it is entitled "School Instruction Model." I think this is sort of the traditional, and to a large extent the present model under which we operate. What we have is this: a learner—that is somebody who comes to school with the idea of actually increasing knowledge or achieveing. That is the person who can be viewed as the end product of a school. That is one fact that is sort of recognizable. He brings with him some things. He brings with him some culture—whatever he has been exposed to up until that time; his personality—you say, "Well, those overlap" —I agree, and I am not saying that these are mutually exclusive, not even an exhaustive list. I am just trying to get across an idea. He has attitudes, he has achievement in some areas. These are all things that we attribute to people. We say: "He has achieved at a level" or "He has these attitudes." We also talk about interests, and we measure these. As a counselor, I was always using the "Strong Vocational Interest Battery" and the "Kuder Personal Preference Schedule," and I was measuring interests. I got the score on a test and there was a lot of research—not always too definite, but mostly positive, telling me I could do it. I also measured attitudes, and I measured aptitudes too; and I measured all of these things we attribute to an individual. Well, the learner comes in and says, "Here I am, and I brought with me this: I have some culture from where I have been" and so on. "I am a person." We take a good look at this person and we prescribe some objectives for him. You can use that term any way you like. You have used it in the new form of "behavioral objectives" or "performance objectives," and I like that because I have already admitted that I am sort of predisposed that way. Once again, you do not have to "buy my point," it is just that I feel in making the case for this, I have got to give you "my set." My

SCHOOL INSTRUCTION MODEL

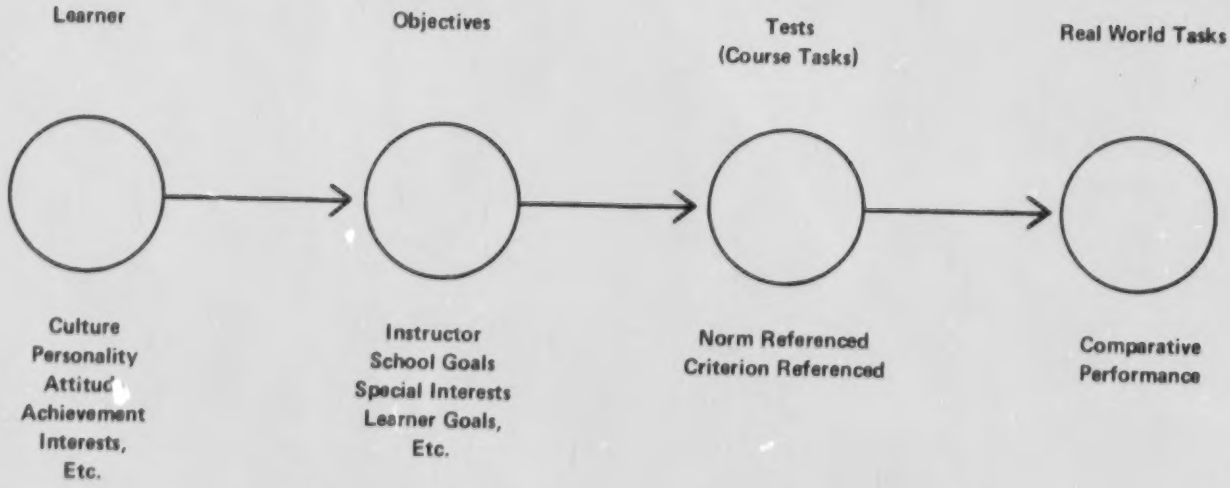

Figure 1

set is toward "performance objectives." I like that way of proceeding. We shall talk more about that in just a minute. But whether you think of it in terms of performance objectives, or whether you talk about goals for the individual, you do have some objectives. You plan on doing something for him or to him or something, and you know you do because in the school catalog it says we have courses and they have names. And if you name them, you have courses. Then you must have some idea of what he needs because you give him something from which to choose.

We have several places for these objectives. We look outside into the community; we look at the board members; and we look all around; and we come up with something that we intend to do to these people. Someone comes in and says, "I am interested in your degree nursing program." You say, "Okay, if you are interested in my degree nursing program, let me tell you what a nurse accomplishes before he or she gets out of our institution." We have some idea of what we want to do with the person. As I said earlier, we shall return to that. And once again, do not get hung up on that. It is my position and I like to talk about it and make a case for it; but I ask to be understood, not that you "buy my set—my way of doing."

We have tests. I will get to the types in just a minute. We always test people because we have to determine, somehow, when to "let him out." He comes in and we say, "We are going to do these things for you (or to you)," and we do these; and we always test them—invariably—somehow.

We usually use two kinds of tests—norm-referenced tests and criterion-referenced tests. Norm-referenced tests are "those that compare the individual with the average or cut across the average of all the other individuals, or some selection of the individuals." Anyway, you have got to compare him with somebody else. And "norm" being average, you are going to somehow get a comparison, and you are subsequently going to make some choices about him based on that comparison.

Next, we have criterion-referenced test items. This is sort of new. It has only been around for a couple of years, but I think you are going to hear a great deal more about it. And I, of course, personally hope that you do because I am committed to that way of looking at people. It allows you to look at an individual as an individual and to look at

individual accomplishments as individual accomplishments toward goals, toward meeting pre-set objectives, as opposed to going compared to other people. And I think that is the way the world is going. We have some people who are working very hard at developing that idea. You probably are familiar with the "Learning for Mastery" monograph by Bloom, and are familiar with the work dating all the way back to 1938 of Ralph Tyler, who first came up with the idea of setting objectives. You have two kinds of tests: one is performance-oriented, that is, having the student do something and observing the level at which he can do it, after telling him what it is that he is supposed to do; and the other one is norm-referenced, that is having the student do something and observing how well he does it compared to other people. Either way, we test him.

But where do we test? We test in courses in schools. We test at the end of each course before he goes out and during courses. Now, that is important because you say, "That is the only place I have him; where else can I test him?" That is true, but where is the final test? It is out in the *real* world, and there are real world tasks. A real world task is one that has to be performed by the person in the real world. He can learn and learn, and he can perform in the classroom; but eventually, he has to go out into an environment that is different from the school, and it is always different from the school although some kinds of instruction get closer than others. For instance, on-the-job training, or practice teaching—you say, "Well, that is 'real world,' that puts him out in the real world"; but, does it really? You put him out, but you really take your hand off him. He is never in the real world until he goes out there alone.

Now I think that most of the schools represented here probably have a teacher training program of some sort. I am using teacher training examples—primarily education, and if that does not fit with everybody, I am sorry; but I think the examples hold anyway. If you graduate a teacher and he or she walks in the classroom and has complete control, that is different than any activity in which he or she participated in the classroom.

What we are going to talk about tonight is trying to close these gaps a little bit because we are seeing in education that the relationship is not always one we want, and in many cases is not quite straightforward—that is to say that the objectives that are set for

students are not always set along purely rational, reasonable, and definable lines. They usually come from the sources that I have mentioned, and then they are put into effect in the school and tested by means of teacher tests, and so on, in a way that quite likely shows a good-sized gap between what is actually accomplished in the classroom and what is desired outside when one goes into the real world.

Suppose we were to reverse this diagram. Instead of starting at the left end and taking a look at the learner, then designing objectives which come just out of the experiences of groups of people, outline tasks to meet these objectives, and then implement real world tasks that might or might not match—suppose we reversed it and we were to center our attention on the real world tasks first. See figure 2.

Now why would we want to do that? Let us go back to my discussion of behavioral or performance objectives. A performance objective—using Mager's terminology or Popham's terminology or Walbesser's or Bloom's or Rouche's or any of the people who are writing in this area—is a statement of intent to perform; a statement of predicted accomplishment for the learner—in terms of the learner's behavior. It is written with parts that are specific as far as what the behavior is supposed to be; the conditions under which it is supposed to be performed; and the criterion level (the level that is acceptable in its performance). I handed you a sheet that has that on it—pulled directly from Mager.

The test for behavioral or performance objectives: If you are intending for a learner to accomplish something, you can ask these questions to see whether or not you have spelled it out in definable terms:

– Does the statement describe what the learner will be doing when he is demonstrating that he has reached the objective?

– Does the statement describe the important conditions and treatment, etc.?

And the last one:

– Does the statement describe how the learner will be evaluated—does it describe at least a lower limit of acceptable performance?

There is a trend in our country toward performance objectives. Some of you are already using this idea in your classroom and the

SCHOOL INSTRUCTION MODEL

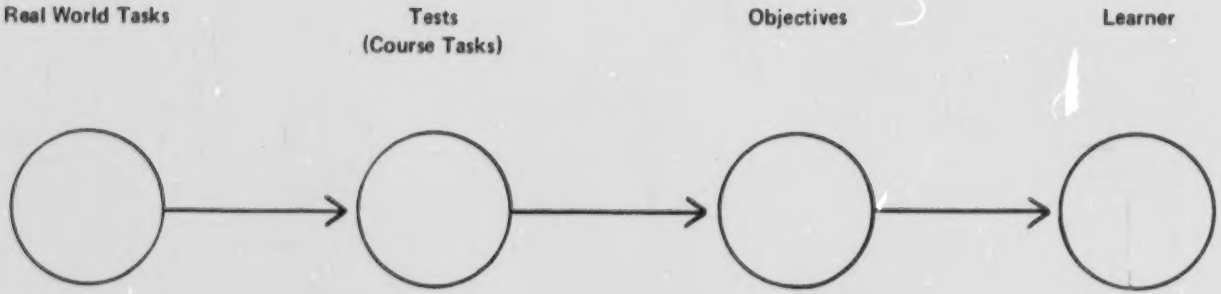

Figure 2

literature is going in that direction. A recent issue of one of the junior college journals was dedicated totally to this idea. You will find *Educational Technology* and AERA journals all talking about whether or not we ought to be specifying objectives. The idea of specific objectives has come into some criticism, of course, and one of the criticisms that is mentioned most is that it tends to restrict an individual—when you specify his behavior, he cannot accomplish other behaviors. Popham, I think, has answered these charges better than anyone else. I included that in your handouts. There is a little paper there in which Popham speaks to the common complaints about behavioral objectives. (See reference 10). We will not try to read it now, but you can use it for later reference. I included that because I think it is the single best rebuttal that has been written along that line.

Let us assume, just for our purposes of discussion in developing this exercise, that you can write performance objectives and that there is some benefit. Let us just take that as an assumption so we can go to another step.

The next step—if you proceed in the direction of our diagram—is to write test items that would, in fact, determine whether or not the objectives had been met. And the way to do that is to put into a specific question the general statement that is the objective. Bloom, in Bloom's *Taxonomy* (See reference 1)—which has been around for about twelve years now—lists six levels of mental acitivty that you can use in specifying an objective. I passed out an outline of Bloom's Taxonomy. Let us concentrate on the cognitive domain. I put in the affective, but the one that I would like to use is the cognitive domain.

Bloom said, in effect, that not only *can* you and *should* you be specifying behavior, but if you will look at the way cognitive learning takes place, you can specify objectives on more than one level. What he is saying is that learning takes place along some recognizable levels in the taxonomy and that as you go up the levels, you are incorporating the levels of the taxonomy below. He is saying that the very basic kinds of learning would be (for instance) recall or recognition—that is, when someone is given a piece of information and then asked to return it and he can recall it and express it. Recall is a very basic kind of learning.

Comprehension—the second level—is higher than recall because in comprehension, you not only can "tell back" something, you cannot only recall it, but you can also do a little more with it. It has some kind

of a particular meaning for you. And then as you go on up in hierarchy—and we will not go through the other steps—you get more and more complex. You put two comprehensions together and you can do analysis and synthesis.

To me, the taxonomy makes sense. You say, "Well, do you mean that the brain is set up like this?" No, not at all. If you do not take it in any other kind of context, the taxonomy at least gives a kind of structure that you can use in designing your instructional strategies.

If we accept Bloom and we can specify an objective, we can say that there is a behavior and we can state it takes place at a perfromance level and there are different levels of these objectives and some are more complex than others. Working on that assumption, we can design tests for these objectives and they would be criterion-referenced tests where you would ask someone to perform, under certain conditions to a certain level, not with an idea of writing items that you can spread out over a normal curve and get some distribution so that you can rank people. This is the whole idea—to not do that; but to get an indicator of whether or not the individual can perform on a specific objective.

How do we determine at what level an objective is written or what the level should have been? When I worked for the state of North Carolina, I traveled around the state and talked to the project directors for federal programs. I would encourage them to write performance objectives. It was mainly selfish because as an evaluator, I could better evaluate performance to a level when I could see the performance. When something was spelled out in a general goal, it was just sort of his word against mine—whether or not the goal had been accomplished; but when we started specifying things that they were going to do—with time lines, and so on—then I could get a handle on what it was they were trying to do and I could see whether or not it had been done.

They said, "Okay, we will write objectives," and they did.

I said, "Now, I would like you to write them at different levels. Here is how you do it." I would bring in some consultants, and we would talk about Bloom's Taxonomy. (There are other taxonomies, such as Merrill and Gagne; these are taxonomies that take sort of a different approach. The one that has hung on longer and really withstood a lot of research and time is Bloom's, so I would like to use that for an example). They said, "Okay, now, you have convinced me I ought to write them at different levels. How many do I write at what

level?" *And that is the question that I could not answer.* I really did not know. When I asked other people, they did not know either.

"Do I write six at the knowledge level, five at the comprehension level and four at the analysis level? Okay, you have told me how I ought to be doing this, now is there any way I can get a handle on how it is done?" I did not have an answer for them, and I might not yet, but I have something that I would like to ask you to take a look at.

If we take our real world model—turn it around and look at the tasks that a person has to perform in the real world—it is quite possible that we can get some indicators that will give us levels of objectives, just by working backwards. Now, I am making a lot of assumptions here. I am assuming that the real world activity is a good activity, and I admit that; but I think that we make those assumptions somewhere along the line. If you produce a teacher, then you are automatically making the assumption that teachers are needed. You give them a name and you say, "I am going to produce an elementary schoolteacher, a secondary schoolteacher, a pre-school teacher" —you are assuming that the world needs teachers. If you can make that assumption by utilizing the goals of your school, the philosophy, the environment, and all of the other things that are brought to bear on the choices that are made, and you use enough people to make the choice, you have arrived at the choice point for instructional purposes. That is all we are talking about here. I am not talking about curriculum development. We are not talking about whether or not we should be producing teachers and the right courses and this kind of thing. Nor are we talking about curriculum development—maybe we might expand to that some day. Right now, we are talking about one instructor or a group of instructors trying to write better objectives for their courses.

If we turn our model around, as I suggest, then I can ask "What is it that a teacher does?" (I will help on this a little because the examples I have on paper are familiar to me.) Let us narrow it down to "What does a fifth grade teacher do within some discipline?" For instance, could you get any kind of a list of what a fifth grade teacher does in social studies? In other words, what does a fifth grade teacher do that he/she learns, somewhat at least, from experiencing courses in social studies in college?

Look at the list I handed out. (See the Task Analysis Worksheet, Figure III.) The ones I would like for you to write for me in a few minutes should be much better than this.

I just jotted down three general tasks and a few specific tasks that a fifth grade teacher does that relate to her training in social studies. For instance, he (or she) teaches concepts of role, sex, culture, and social organization. He (or she) teaches male and female roles in different cultures as well as the meaning of culture.

Now you say to yourself, "I can get more specific than that." I am sure you can and I wish you would; but I think the beauty of the system I am proposing is that you get a kind of pattern for objectives even when you do not get that sepcific. One of the criticisms—which I did not mention—of performance objectives is that they force you to be so specific, and specificity destroys what motivation the instructor has, and usually the instructors either drop the endeavor or they come up with some not-so-good objectives. I guess if we use a more general system, it is better than a specific system.

Another task is "teaching geography of North Carolina." This may involve teaching map reading, concepts of industrial development, and the impact of societal changes on agriculture. The last one is a personal development task. This task is not something that you should pass on to the kids in the class, but actually this is something that is learned in school—in higher education—which enhances one's personal self. Now, I put this in because I am a believer in task analysis on all levels and that is one of the criticisms of the system. If you are talking about training—that is my work in vocational education—where you learn how to repair a television set, the system is accepted; but if you are talking about educating the whole person, task analysis will not work. I agree with part of that, but not all of the criticism. I put in the last task to show it is not specific to the job description.

Now look at the next column in the middle. This column is a list of four tasks. They are things that you might ask these persons to do. These are specific things you might ask them to do as an indicator that they can do the tasks on the left—in other words, "If they can do these tasks in the classroom, then they can perform in the real world. If they can do column #2, then I will be happy to let them go into the real world." That is the only substitute that you have because you cannot follow them into the real world except for evaluation.

That is the thing we were talking about a while ago. For instance, in the first task, "teaching concepts of the role culture and the male/female role," you could have the person compare the role of women in the Hopi culture to that of women in our culture, then

FIGURE III

TASK ANALYSIS WORKSHEET

REAL WORLD TASKS (NOW & FUTURE)	COURSE TASK (CRITERION REFERENCED TESTS)	PERFORMANCE OBJECTIVES	TAXONOMY LEVEL (BLOOM)
	(Read a description of Hopi Indians' culture.)		
Teach concepts of role, culture, and social organization. Teach the male and female roles in different cultures. Teach the meaning of culture.	1. (a) Describe the role of women in the Hopi culture.	The learner will construct a role description containing all essential elements from a book or paper describing the culture of them.	
	(b) Compare the role of women in Hopi culture to that of women in our culture.	The learner will exhaust the essential demands of a role in American culture today from his own experience.	
	(c) Define the concept of culture.	The learner will define the concept of culture. His definition will be concurrent with that contained in the textbook.	
	(d) List five roles in the Navaho Indian culture.	The learner will be able to list five of the seven major roles in the Navaho Indian culcure.	
Teach geography of North Carolina. Teach map reading. Teach the concepts of industrial development. Teach the impact of societal changes on agriculture.	2. (a) Use topographical survey information to construct a bas-relief map of the state.	The learner will correctly interpret topographical survey tables.	
	(b) List the 6 major industries in the state.	The learner will be able to list sixty percent of the major industries in N.C.	
	(c) Describe the top three major agricultural activities in the state.	The learner will be able to list the top three agricultural activities in the state.	
	(d) Discuss the possible effects of a ban on cigarettes on the economy of the state, given the essential data.	The learner will be able to interpret basic economic data and form assumptions and predictions based on that data.	
Participation in government voting. Supporting candidate of choice. Attending board meetings. Writing to congressmen. Increase awareness of social problems.	3. (a) Describe the election process in the U.S. in no more than 10 written statements.	The learner will describe in writing the election process in the U.S.	
	(b) Contrast in open discussion the process of secret balloting with any other form of selecting government officials. What benefits other than information can be derived from attending board meetings.	The learner will state similarities and differences between the U.S. voting system and other systems and explain the effects of each.	
	(c) Describe briefly in an essay 5 social problems in our country and the possible future effects on our life.	The learner will be able to describe the effect on our country of at least five social problems.	

define the concept of culture. In my mind and those of us who work with this, we see these items at different levels of complexity. When you write an objective—that is the general set of this specific set—the objective might read as follows: "The learner will construct a role description containing all essential elements from a book or paper describing the culture of them on his (or her) own." Look at the next one: "The learner will exhaust the essential demands of a role in American culture today from his own experience." As you come on down, you will find some that say "list," such as "The learner will describe in writing the elective process in the United States." Some others are more specific than that. "The learner will be able to list the top three agricultural activities in the state." Okay, what level is that one? It is pretty basic. You can memorize that—you can learn that in any grade—memorize it and recall it; but, using Bloom's framework, there is a difference between it and the bottom one where the learner will "state similarities and differences between the U.S. voting system and other systems and explain the effects of each." There is no way you can recall that unless you pull it verbatim out of somebody else's work, and that is readily apparent. You are tapping a high level activity. Now whether or not you buy Bloom or whether you are just willing to go along with me and say, "Well, Bloom makes sense in that there are levels and that they range from straight recall up to higher things like analysis and synthesis and putting things together"—if you are willing to go that far with me, then I think that if we got a good task analysis generated by an entire department in a school, or generated by an entire department plus consultants, we would begin to see the objectives fall into recognizable place. There are some things that a fifth grade teacher does that are more at the analyzing level, and some that are more at the recalling level. The difference is between the kind of course and the level of a course. Is it a throughput or an output course? The difference between those being that Algebra 101 is primarily a throughput course. Usually the output of 101 is the input of 102, if there are two courses or you have sequential courses. Quite a bit of 101 is at fundamental level—symbols, techniques, concepts—processes that are going to be used in analysis and problem-solving. You do a lot of high level work, but primarily, that comes with advanced courses where you use these fundamentals in analyzing and synthesizing. An output course, then, is one where the output of the course is closer to the real world. Senior level courses by

and large are output courses. Senior or at least English courses are primarily output courses because there are no other courses. You come out of it with the kinds of things you are going to take into the real world. That is a comfortable way of looking at it. Maybe you disagree, but there are patterns that seem to develop using this technique. Perhaps, the output of a low level sequential course should not be called "real world" because the learner is still in school. The principle is the same. Perhaps it needs new terminology. Your comments on this will be appreciated.

The next thing I want you to do is to consider another area of fifth grade teaching. I would like for you to group up, if you can, and brainstorm some tasks and write some items that would satisfy you that the person is making headway in that task. You say, "Well, I cannot write them all." I know, but I think that by getting a list that runs to ten or twelve, you can begin to see a discernible pattern. And I would also like you to look at the categories of Bloom's Taxonomy. Take the form that is already filled out and go down the right column and see sort of where they fit. I handed out another paper—the little thing that has Bloom's Taxonomy and some examples of infinitives in the middle that exemplify the processes. It does not mean necessarily that you have to put the infinitives into the objectives as you write them, although there is nothing wrong with that. For instance, "knowledge level, knowledge of terminology—to define, to distinguish, to acquire, to identify, to recall, to recognize," indicates the level of cognitive activity. You can assume the circumstances, or you can specify them and that is what I did on these. I appreciate your reminding me of that because I should have said it. Also, I do not have the criterion level to achieve. You have to specify the level—is he going to have to do it nine out of ten times? Must he do six out of eight items of a level of 55% accuracy? Yes, you have to specify this.

If there are no questions, try the exercise and we will post some of the work for class consideration.

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THEORIES AND PRACTICES FOR INDIVIDUALIZATION AT THE COLLEGE AND UNIVERSITY LEVEL

Dolores E. Cross

What happens between faculty and students in the interactional process is perhaps one of the most important areas in educational research. In evaluating the interaction, observers sometimes make inferences about the quality of the interaction based on provisions for instruction in the classroom structure. It is sometimes erroneously concluded that the teacher's interactional process responds to individual differences if there are provisions for individualization in the classroom structure. Teacher A may be in an institution with many materials, resources and institutional plant planning for individualization. Teacher B may be in an institution with minimal resources, materials, and institutional plant planning for individualization. It does not necessarily follow that Teacher A is responding more to individual differences than Teacher B. Responding to individual differences means planning and learning by participants who utilize accessible materials and human resources.

The teacher, therefore, begins by involving participants (students) in discovery of resources in the situation. The provisions in the classroom structure are then placed in perspective of one dimension of the resources to be developed in light of strengths and weaknesses. In turn, determining whether or not individual differences are being responded to the classroom structure involves looking at the activities and dialogue the teacher initiates and maintains. Specifically, this refers to teacher and pupil participation in *assessing* human and material resources in the classroom, *cultivating* experiences to enhance, utilize and discover human and material resources, and *re*assessing at different points the change as well as understanding developed.

The interactional process characterized by contacts through assessing, prescribing and instructing can lead to improved awareness of self and others, as well as a valuing knowledge of the individual differences. A key factor is the constructiveness of the dialogue. This refers to faculty-student and student-student dialogue developed as individuals in the group focus on what is to be done, the resources available, and outcomes anticipated.

Assessing

> The teacher and a group of students explore the resources of their classroom to intiate a specific project. In the discussion the students share ideas and past experiences in dealing with similar tasks. While observing, the teacher makes decisions on guiding instruction and involving participants. Through the interaction, the students gain knowledge of the task, accessible resources, and how this situation and participants differ from others.

The assessment process is a systematic activity that is highly personal and interpersonal. As a personal activity, it draws from knowledge, style, aim, as well as teaching and learning competency. As an interpersonal activity, it depends on data from informal dialogue with the student, peers, and others who know the student, as well as the meaning the teacher gives to the formal profile of the student derived from objective testing.

The assessment process includes looking at the classroom structure (and its resources) and the individuals (teacher and students), to determine what helping and holding forces facilitate or inhibit goal realization. Formal or informal testing devices facilitate information gathering. Informal techniques may be the simple process of asking the student what he sees as personal strengths or weaknesses and what is his area of interest. Formal assessment with objective testing instruments can show the relationship of an individual to other members of the group along select dimensions. Both formal and informal assessing serve to increase the teacher's knowledge of student differences. This process of information gathering does not have an ordinal place in the system of planning. It should take place when teachers and/or students decide data are needed.

Cultivating

> The teacher and students are involved in activities which build upon the knowledge of participants. In completing a specific project, students use accessible resources. Discussion is also directed to awareness of possible activities and explorations in other learning settings. The teacher may also introduce films,

supplementary readings, events to show how individuals and groups outside the class or local environment might perceive or handle issues involved in cultivating knowledge, valuing and utilization of provisions of a particular setting. The intent is to stimulate thinking that can use diverse human and material resources.

Cultivating leads to designing of a specific network of learning activities, sometimes referred to as programming, contracting or drafting. Designing the program aids both teacher and student in determining the sequence of activities and what material or personal resources are required. The process of designing the activities can be initiated by the teacher or the task of planning may be part of the learning activity of the student.

As the student "works through" the program design, certain choices are made: what to do (skill involved, instructional area) with whom (independently, small group, large group), when (immediately or at another scheduled or unscheduled time), where (in the classroom, corridor, library, or learning center), and how (scope and limitations of project). Having a program design expedites choices. The design should be subject to revision after consultation with the teacher and/or other participants involved in the project. Program designing can be done on an individual, small group, or whole class basis depending on the task and its appropriateness for all or some of the class members. In the interactional process in which the program design is developed, the participants define each other's resources and experience the norms of the learning situation as well as the physical resources in the classroom structure.

Reassessing

The teacher and student are involved in identifying and evaluating the individual processes and skills that contribute to outcome at a particular point. Through group or conference with one student, the experience is reviewed. In these sessions progress toward predefined goals, supplementary findings, and new possible directions are explored.

As with all learning, evaluation is essential in group projects. Initial assessment occurs during the planning stage. Group members and the teacher will participate. As the project progresses, intermediate evaluations of progress will take place. Such evaluations usually take the form of a group conference with judgments being shared with the teachers. How long evaluation sessions will be or how formal they will become well depend on the nature and length of the project. The goal is to achieve a spirit of teamwork that focuses on the tasks to be completed. Assessment may relate to individual contributions as well as to the group attainment. They will move from one point of development to another, aiming to enhance student perceptions and to motivate continuing effort rather than to censure individuals or to turn the effort into an ordeal to be resisted.

When projects extend over several days or weeks, it is well to formulate a written design for the team effort. Such a long-term plan should provide goals for individuals as well as the group as a whole. The teacher's job will be to make sure that the needs of all are considered when the project is planned. The group may need help in relating various individual needs to the total project.

A teacher-student conference of a few minutes may be all that is required to initiate a project. Additional progress conferences will help to keep it moving. In the process, the teacher should take time to get the proper understanding between self and the students. This dialogue can initiate another project or extend involvement in the task.

Administrators, colleagues and supervisors can therefore, determine the extent of assessing, cultivating, and reassessing in a learning situation by observing faculty-student interviews,listening to the dialogue initiated and maintained by the teacher, and noting student utilization of human and material resources in the classroom structure.

An approach to aspects of individualizing college teaching draws from the preceding theory/approach:

I. Set-up faculty-groups of 5-6 individuals (in similar academic areas).

II. Involve these groups in an understanding of the compcnents of responding to individual differences, namely assessing, cultivating, reassessing. This can be facilitated by their sharing:

(a) teaching styles;
(b) resources in their teaching situation (human and material resources);
(c) observation of differences they perceive in student ability, motivation and interest;
(d) a written brief profile on a student.

III. Utilize student profiles as a group:

(1) plan a sequence of three lessons that would encompass the introductory experiences for these students;
(2) plan an individual experience for each student in the area of strengths;
(3) plan a method of evaluation.

IV. Discuss the following in light of how their presence or absence facilitated individualizing:

(1) opportunities for intra-class grouping (Are the chairs moveable to facilitate small group work?);
(2) variety of materials;
(3) differentiated assignments (materials for gifted, average, slow learners);
(4) pupil autonomy (Are students free to select supplementary materials, explore the subject area the way they want?);
(5) student-student tutoring (Do the students use each other as resources?).

V. Involve the group in rethinking plans developed in part III based on discussion of resources (hopefully) discovered in part IV.

VI. As a group, reassess your thinking about college teaching and share with the group.

I have become increasingly concerned that the change we seek in institutions for clients happens with the force of the individual style we project and the development of colleagues who also care.

A Brief Description of Seminar Activities

The seminar focused on individualizing instruction in college teaching. The following objectives were emphasized:

(1) orienting participants to dimensions of individualization related to instruction;

(2) facilitating the participants experiencing of self as a resource in designing appropriate intervention;

(3) providing experiences in planning for students in a manner that responds to individual differences through individualization.

Introduction

As an introduction to the seminar activities, "*The Influences of Individual Difference on the Instructional Process and Classroom Structure*" was quoted from the author's chapter in the book entitled *Theories of Instruction*, published by Dodd-Mead, Fall, 1973:

"Participants enter learning situation having experiences and stored unique ideas about the quality, quantity, and import of individual differences. Teachers through formal training and use of evidence from psychological, achievement, and ability tests have objective data on the variability of students. The data can be refined to yield a test profile indicating information on the intravariability of the individual. For example, two students who have attained the same total score may present different aptitude profiles when their performances along specific lines are analyzed. In addition, teachers have the resources of their personal and professional experiences that provide subjective data on human variability.

"Pupils have less sophisticated data to describe differences experienced. Through socialization, the process of social learning, the student compares self and others, finds a personal social role, gives it definition, and develops it. In the early years, the behavior of the young child is largely influenced by parents. Gradually in the elementary school years, and more markedly through junior and senior high school, the peer

culture becomes a significant socializing agent. The student's knowledge of individual difference is largely a product of subjective data.

"Thus, teachers and individual students have opportunities and dispositions for different experiences that would place them at different points on a hypothetical continuum with points indicating optimal to minimal knowledge of individual differences.

"The recognition and acceptance of the view that the United States can no longer afford the uneducated man is another reason to choose to respond to individual differences. In a large part of the world, the worker no longer predominantly performs human tasks imposed by a pretechnological era but has need for the skills of knowledgeable technician with distinctly individualized abilities and for carefully cultivated individual potential to prepare for the automated complexity of the 20th century society (Shane, 1962) NSSE p. 45, or as expressed by Dewey: .'A progressive society counts individual variations as precious since it finds in them the means of its own growth. Hence, a democratic society must in consistency with its ideals allow for intellectual freedom and the ploy of diverse gifts and interests in the educational measures.'

"For philosophical, educational, political, or social reasons, participants in the learning situation might ascribe to the value that individual differences should be respected and responded to. Conversely, there might be considerable divergence among participants as to whether there should be a response to individual difference, and more specifically, disagreement as to which aspect of human variability should have priority. For example, a teacher might view academic competency in geography, while a student or students might view competency in ethnic cultures as a more valued choice.

"Few educators would deny the reality of individual differences and human variability in knowledge and valuing of these differences. In a literal sense, everyone is exceptional, for although classifications are possible with respect to a given aspect of individuality and although there is a concentration of cases about the central tendency in a given trial, it is the integration of numerous and varied characteristics that gives a person individuality . . . the psychological fallacy of undifferentiated or mass education is somewhat apparent (Freeman, 1934). The question for many educators is how to best respond to individual differences in the classroom structure."

Process

In order to respond to changing or modifying approaches, it is important for the individual to assess personal resources and experiences as well as valuing of individual differences. During the seminar sessions, we:

(1) identified the resources within the group;
(2) participated in a discussion to plan methods of interventions;
(3) designed instructional practices for classes.

As a background for this format, the following quotation from Carl B. Rogers was shared:

> *"I realize increasingly that I am only interested in learnings which significantly influence behavior.* (Quite possibly this is simply a personal idiosyncracy.)
> *I have come to feel that the only learning which significantly influences behavior is sefl-discovered, self-appropriated learning.*
> *Such self-discovered learning, truth that has been personally appropriated and assimilated in experience, cannot be directly communicated to another.* As soon as an individual tries to communicate such experiences directly, often with a quite natural enthusiasm, it becomes teaching, and its results are inconsequential. It was some relief recently to discover that Aoren Kierkegaard, the Danish philosopher, had found this too, in his own experience, and stated it very clearly a century ago. It made it seem less absurd."

I shared Rogers thoughts on teaching and learning, and confidence in the resources we represent for each other and students.

Evaluation

The initial stage is assessing which leads to decision making. In this step I started by assessing myself as a resource to the group and drew heavily on my experience in individualizing instruction. Second, I

distributed a design that was completed within the time block. The third stage was the development of materials, handouts and an image of interaction to facilitate completing objectives. This was drawn from experience, reaction of other groups and the uniqueness I perceived in this group. Case studies and descriptions of situations for group planning were used. The design was subject to revision. The fourth stage was to reassess my interaction with the group during each session and also at the conclusion of each session. In this phase, it is important that as a leader I assess to what degree I have completed the stated objectives. The participants assessed their knowledge of the concepts, involvement in the process and perception of the leader's planning and facilitation processes to complete the objectives.

Finally, it is hoped that the seminars conveyed an involvement with process on a theatrically as well as a practical level.

HUMANITIES INNOVATION IN BLACK COLLEGES

Clifford Johnson

Study of the humanities can be the most exhilarating and meaningful component of a college curriculum; the ultimate subject of the humanities is Man, and the object is the totality of Man's experience in the world. Our arts, religions, and philosophies are the vehicles of this interaction, and the conclusions reached materialize in secular and sacred social systems. Logging and cataloging the artifacts and vicissitudes of these systems are essential to the continuance of the human race. But when we speak of studying the humanities we mean to engage in that process of discovery that may begin with human experience, yet urges us to go beyond its most mundane features to levels where we make direct and energizing contact with that which is most characteristic of Man—our spiritual essence.

An abundance of written material has been dedicated to describing the nature of the problems that confront educators in the humanities. Administrators and teachers are exhorted to change their evil ways, but are seldom shown how to begin to detect what might be missing in their course offerings and strategies, and almost never shown what to do once that has been determined. This paper attempts to fill this need by sketching out a checklist, which is by no means complete, but rather represents a point of departure for trouble shooting. All comments refer to the introductory humanities course. We start with first things first, and stress the importance of the course as a unique opportunity for a majority of students to sample the scope and power of the humanities courses and to scrutinize departmental programs and priorities. The unique character and historic background of each institution will dictate how that would be done.

Following the checklist is a random selection of typical situations that might occur in a humanities classroom accompanied by a short description of an in-depth approach to its educational use. Other situations are listed for the reader to ponder. The situations should have a familiar ring; they are representative of what students in black colleges across the country bring with them to class.

Humanities Course Checklist

1. How many of these are acceptable as a focal point for class discussion, activities, or written assignments?

____ A novel

____ A sports event

____ A newspaper article

____ A TV program

____ An argument; personal or political

____ A new soul hit

____ The Watergate controversy

____ The latest black film

____ The Mid-East conflict

____ The energy crisis

____ Pornography

2. Talented students are viewed as valuable resources when questions related to music, art, drama, poetry are considered.

3. Students wrestle with thoughts of such complexity that they are often forced to seek advice from instructors on how to put them down on paper.

4. Students frequently illustrate opinions and concepts with examples from their daily experience.

5. Students frequently discuss the relationship of classical works in humanities to themselves as blacks.

6. Class arguments have, at times, stimulated students to do outside research.

7. Students bring in relevant materials (clippings, articles, books, and so forth) to share with fellow classmates.

8. Teachers are frequently forced to do additional reading and research in order to recommend useful outside material for students.

9. Students bring friends to class when something exciting is scheduled to happen.

10. Students offer to contact friends who might serve as resources on a particular subject.

11. Class discussion often spills over after class hour is finished.

12. Instructors design course outlines in such a way that allowances (extra time) may be made for unexpectedly good responses on certain units.

13. Students refer to books, assignments, discussions, dealt with in other courses.

14. One or more of these topics come up directly or indirectly in the course of every discussion:

    sex
    drugs
    politics
    pollution
    college administrators
    pimps
    corruption in low and high places
    latest slang words

SITUATIONS: (What could be done if . . .)

1. A student plays and sings regularly for Sunday service at a local Baptist church

   In the classroom use of music, an instructor would do well to consider the origins of the forms considered. All music stems at base from the folk tradition and the folk tradition is *sacred.* By sacred is meant indispensable, therefore precious. Religion is the most profound expression of folk impulses, and in the black church, as in all others where the majority of adherents derive from the common folk, a boundless reserve of spiritual energy is reflected in the music; sometimes in a painfully intense way, but always in a manner that leads the worshippers toward inner peace and satisfaction.

   If an instructor is fortunate enough to have such a student, educational currency can be made of his occupation in a number of ways: to demonstrate his craft and art to others; to lead discussions on the subject of religious music; to identify other students similarly inclined; to host a rap session with the church minister discussing and/or demonstrating the stylized blending of words and music in the art of preaching (so much a part of the black tradition of oratory). From here one easily moves to other issues: derivative popular music; modern trends among young people who are turning back to gospel music; the phenomenon of church musicians going commercial; the distinctions made in Africa, Asia, and Europe between sacred and secular music; and the connections between music and dance.

2. Several students frequently appear in class with hair braided African style

   Style is as fundamental to art as form is to substance. Cosmetics, hairstyles, clothes design and jewelry make an important statement about a historic period. The craftsmanship visible in furniture design, the delicateness of fabric weaving and the patterns apparent in a hairdo speak of the social and moral values, and esthetic preferences of a people, and even of an era.

Traditional African societies stressed the intricate connections between all manifestations of life. Any component of the material universe was regarded as a microcosm, a display in miniature, of the whole universe. The same reasoning was applied to social design; a societal system of law and order was not a reflection of Man's arbitrary concoction but rather harmonic vibration of cosmic order.

To pick up a custom from the past which appeals to us could be interpreted as a way of retrieving something from a storage closet that we recognize to have meaning, though hard put that we may be to say exactly what. In this process, a sort of coded message reaches us across time and is received in some newly awakened part of our being. This is how past insights are reincarnated into our emotional present.

Few students will be aware of the philosophical context out of which braiding comes, still fewer may have noticed hairstyles identical to those that they are wearing carved on the African masks and the sculptured heads exhibited in the local museum.

This is the sort of discussion that will open out onto an examination of the relationship of traditional social customs to the organization of self-concept in individuals of that society. Beyond this, students might probe into why and how value shifts occur over time in human societies, and, specifically, what changes (within our own society) are discernible during the past quarter century.

3. Several students carry around books on astrology and the occult

Occultism, contrary to popular belief, has much to do with religion, philosophy, art, and science; in other words, with the humanities. What we refer to today as the occult, which means hidden or secret, is identified as such because little attention is devoted to the subject in our educational experience except to categorically deny its validity.

Occultism derives from a period of our history on this planet when Man's relationships with nature and the universe were more direct than at present. Man perceived himself as an integral component of nature, and the links enjoining the Man-God-Nature could be discovered and lived, thus rendering to the species a strong sense of divine purpose. The scope and gravity of these matters were expressed in a brilliant and rich vocabulary of metaphors, images, and symbols containing infinite varieties of meaning. The educational systems that provided access to such knowledge were strikingly different from our own. They emphasized personal development and experience in accordance with the orderly elaboration of creation of which Man comprised a special part; the ultimate objective was to assist the young to align themselves with universal forces and thereby unleash their own creative potential.

The wholesale failure of our educational institutions to explore questions of personal significance to young people within the day-to-day scheme of things has left a void. We helplessly witness numerous students sink deeper and deeper into abysmal apathy, never understanding the void, but only feeling its affect. Other students seek to satisfy compelling personal questions through the occult—astrology, numerology, palmistry, even witchcraft—often suffering from scant and distorted information, with no guidance or directions as to how these systems of thought may be placed into the context of twentieth century America.

One might begin with occult symbolism—the zodiac, triangle, circle, Star of David, etc.—as starting points for humanistic inquiry. Mythology is replete with allusions to the stars, constellations, earth, air, fire and water, not to mention the personifications who are elaborations of these forces. Television drama and commercial films increasingly depict ESP, telepathy, witchcraft, and provide stimulating sources for discussion. And the modern developments in parapsychology make for good reading. The key here, as in any other teaching situation, is the teacher's willingness to venture into the territory of the students own interest. If renewed interest in learning is to ensue, that is where the action is.

4. Several of your students are athletes (football, basketball, track)

Play is found in all human societies and in many animal species. Through play, the organism explores its mind and body in a manner profitable to the growth and maintenance of both. In Man, team cooperation, competition, and a healthy testing of mental, psychological, and physical limits may be involved.

Mass-sport, as we have come to know it, incorporates play but emphasizes the spectator more than the player. In other words, the needs and wishes of the performers, originally the sport's reason for being, now become simply a means to an end—the show, and as we all know, the show must go on. Sport is metamorphosed into a spectacle, the spectacle becomes the superproduction, and the superproduction is big business.

With the improvement and expansion of mass-media techniques, mass-sport assumes an awesome place in the contemporary hierarchy of values. Saturday and Sunday afternoons, for instance, are sacro-sanct days in millions of homes where, with due ceremony, the ritual of football is religiously observed. Basketball strengthens its magical appeals yearly, and the summer Olympic Games, every four years, are the talk of the town all over the world.

Nearly as much as the cinema, mass-sport has aided in giving birth to the popular-hero. Once properly annointed by popular acclaim, an athlete may choose his career among motion pictures, television, business, or high political office.

Indeed, even before climbing the ladder of success, certain gifted young men and women who excel in sports can go to the finest colleges and live royally while doing so. Consideration of these values is very much at home in a humanities classroom.

Your students may or may not have meditated on these notions, but they would if given a fair start. The athletes in the class will be more than willing to give an all out effort to an instructor who

espects their field of study. Numerous books by black sports figures are easily accessible. In them you will find candid discussions of their struggles to retain their own humanity in the midst of exploitation. Their strong mental dedication to the achievement of personal perfection is the stuff of the classical hero. From there, for example, one might easily move to analogous considerations in the world of popular music.

5. Some of your students possess an extensive repetoire of stories and assorted folklore

   Story telling has always been the principle medium used by Man to project social ideals, values, taboos, humor, and the entire range of accumulated wisdom among the species and to the new generations. Stories told by blacks in the back country or in the urban setting still retain much of the insight gleaned from the black experience in America. A concise example of this may be found in the blues.

   Entrance to this rich body of material is quite accessible. Despite the fragmentation characteristic of the black enterprise, numerous images and metaphors translate into surprisingly good points of departure for humanistic study. One might organize a story-telling session in class. Students could make use of music, poetry, and art work which emphasize themes found in the stories, namely, the bad nigger, the jackleg preacher, the wino, the yokel (chump or fool), the circuit rider, and the slickster. Some students might write updated versions of folk heroes, while still others might want to act out the traditions, predictions, proverbs, and idiosyncrasies that are the substance of the tales.

   Instructors would be well advised to follow up these activities with comparative analyses of other folk traditions, alerting students to the use of folk material as the raw material of art.

Other situations may be used with equal effectiveness. Ask yourself what you might do in each instance where you have one (or more) students who:

____plays music in the local night club

____aspires to be a painter

____writes poetry and fiction

____is running for student government

____is a member of the school marching band

____designs and makes original jewelery

____is a militant feminist

____is doing a part in a campus dramatic production

____dances extremely well

CONCLUSION:

Today more than ever students need guidance if they are to fathom the meaning of the black experience in America. New courses and programs must avoid the tendencies toward the superficial so prevalent in contemporary America and must cut sharply to the heart of the matter. Of course black is beautiful, and yes, we crave to know that we, like everyone else on God's green earth, also possess a noble history; but it is easy to espouse the popular political stance, and evade the responsibility. Cannot we also go for broke, and struggle with the hard questions that our history gives us special insight into? What, for example, is the nature of the forces responsible for the tortured predicament this nation finds herself in today? What, in planetary terms, is the significance of the black experience in a country where over fifty languages are actively spoken? Is the fruit of our experience the pathological eruption that the sociologists and psychologists have told us it is, or is it one of the most subtle and delicate expressions of the human soul, as some of our artists proclaim? These are just a few questions from which hundreds of new questions could derive, whose

answers, far from sailing off into ivory towers of abstractions, would lay the conceptual foundation for the future citizens and leaders who sit in the classroom, expectant, right under our very noses.

DEVELOPING THE TOTAL ACADEMIC PROGRAM – STEP ONE

Helen Matthews

For an audience composed of administrators, department chairpersons, professors, and subject matter specialists of post secondary institutions, there is little need to address the philosophy and theory of curriculum, its structure, development and function. Earlier seminars and workshops of CAP have dealt in-depth with these matters. As a consequence, participants are concerned with the issue of accountability in curricular design. The learner must be more than literate if he is to enter society as a productive citizen. He must be thoughtful, resourceful, inquisitive, competitive, and most of all self-directed in extending his knowledge and competencies. To stimulate development of these traits, a curriculum must be engineered to provide experiences which reflect elements in society's institutions. This means the traditional curriculum in formal education must be researched, assessed, and reconceived at points deemed obsolete, irrelevant, and extraneous. Curricular components must be sequenced and implemented to inform, stimulate, and facilitate student involvement so that literate, productive graduates emerge.

It behooves the institution to pool its human resources through the vehicle of a carefully selected management system to generate an efficient and effective curriculum. There are some management systems available from public and private agencies. Regardless of the system's name or the power-to-sell demonstrated by its creators and promotors, each institution must exercise caution in selection of one. A safe approach to this matter is to articulate the specific *mission* of curriculum development through the use of clear, unambiguous language which educators, students, and laymen can understand. All too often such statements are unreal and incomprehensible in the writers' quest for an impressive, classical, graduate level passage. The mission statement is the curriculum developer's guideline, and the degree to which it addresses the problem with honesty and forthrightness is the degree to which it will direct the development activity in an eventful and meaningful manner.

The mission statement is critical to the selection of a management system. This statment provides the rationale for curriculum development and should be unique to the institution. Brevity, clarity, and reality are the watchwords which will keep the mission statement at the proper level. At the risk of belaboring the point, avoid eloquence and pretentiousness in rambling documents which make nice monographs but fail to serve the purpose.

Immediately after the formulation of the mission statement, a glossary of terms endemic to this task and embodied in the mission must be prepared.

At this juncture, a management system is adopted *and* adapted. The staff should be oriented to the system's component elements and materials. Since the long view must be dealt with first, a procedure for progression toward the goal is laid out. Priorities are then identified and sequenced. Now, the development operation begins with an assessment of what is. Tasks must be assigned in workable configurations—by departments, to persons within departments— and with target dates for each work activity. The coordinator in curriculum construction is as important as the clerk-of-the-works in building construction. Coordination is a key ingredient which maintains the productive flow of developmental events, interfaces professional energy and effort within and throughout departments, and spots turning points, stumbling blocks, and meeting points. A proficient coordinator is the cohesive element crucial to this project. The selection of a coordinator should not be by default, nor due to the title of an administrator, or favorite-son-ism. Dedication, sincerity, and skill in "how-to" are the criteria for this selection. A faculty commitment to serve with diligence should be garnered through the efforts of the chancellor/president, and reinforced periodically. A demonstration of his support by perusal of progress reports, submission of questions and suggestions, and by attendance at several committee meetings is ample in the provision of leadership and exemplary behavior.

The management system's materials and phases govern, to some degree, the depth to which analytical, and statistical appraisal of curriculum development, as well as reconception and reorganization will go. However, no system out ranks the people upon whom it depends for application. With wisdom, discretionary measures may be

taken to alter a ray or two in the system. Avoid contamination of the system to a crippling degree when altering it.

The value of a management system rests with its function as a unifying force among the people who must attend the task. It facilitates inter and intra departmental cooperation so that the finished product is the kind of document described in the Mission Statement and meaningful enough to make a significant difference in what teachers do to facilitate learning and what students do to achieve new knowledge, behaviors and levels of competence.

THE SESSION

During the CAP workshop, participants were involved in a training session to introduce materials of a management system and procedures for their utilization in curricular development for the total academic program.

Procedures

Definitions - a glossary of terms basic for curricular development was distributed. (See Appendix A)

Grouping - teams were formed to simulate typical on-campus conditions and cooperative efforts.

Each team selected a course as the vehicle for development activity.

Appraisal of courses - worksheets to direct a detailed parsing of a course into its major concepts (components) and further into subconcepts were completed.

The accompanying elements critical in the appraisal were:

- time spent with each concept or subconcept;
- knowledge classification of the concept;
- behavioral classification involved in learning the concept.

This procedure facilitates the discovery of inequities in attention to concepts; of redundancy and/or omission in course content; of logic or lack of logic in arrangement of course content and challenge of the learner to achieve; and of resources needed to accommodate learning styles.

Assessment instrument - an evaluative tool was distributed which guides determination of strengths and weaknesses in the course and earmarks points which require reconception. (See Appendix B)

Development - pursuant to researching existing courses in the above manner, identified areas for development were dealt with by:

- designing the teaching-learning sequence through concepts;
- specifying enabling activities through behavioral classifications;
- specifying daily schedule of events, both instructional and learning;
- developing an assessment instrument.

(See Figure 1 and Appendix C).

The materials and procedures of this management system provide a guideline for implementing curricular change regardless of scope. (See Worksheet 1 and Appendix D)

APPENDIX A

DEFINITIONS

1. Technology: the science of techniques applied to human action and conduct to achieve an objective. "Technology" is the knowledge and behavior of know-how and "how to." As used in this book, "technology" is equated with "behavior." It is the knowledge of the singular act (technique) and combined acts (conduct or process). "Technology" is the science of applying human behaviors in a sequence or system to achieve an objective.

The technologies of behavior are those practices found to be efficient and effective as a result of experience. As used here, "technology" is not equated with educational hardware or software. Material goods are the result of the extension of man's abilities (technologies) to design, engineer, and produced material things that function in many ways in which man has designed, engineered, and produced them to function in order to satisfy his wants.

2. Curriculum: the planned, organized, and specified knowledges, values, and experiences encompassed by one or more courses in an educational institution.

3. Instructional system: the specific plan of procedure (process) used to develop the learner's cognitive, affective, and psychomotor abilities.

4. Learning: the technology of changing or developing one's behavior.

5. Teaching: the technology of influencing behavioral development and change.

6. Information: stimulus symbols such as words, pictures, gestures, sounds, forms, odors, and tastes that can be perceived and interpreted as having meaning.

7. Knowledge: the utilization of information in a given context; the fact or condition of knowing something with familiarity gained through experience.

8. Curriculum planning: the technology of researching, designing, and engineering the working relationships of curricular elements used during the instructional phase of the educative process to achieve desired outcomes. It is the activity of formulating ideas and designs for parctical applications—the planning for the change of theory into practice. It is the probelm-solving activity dedicated to increasing the efficiency and effectiveness of the educational

institution in developing individuals as fully functioning members of society.

APPENDIX B

ASSESSMENT

1. Do the subheadings appear to be totally inclusive but mutually exclusive of the heading concept? See Worksheet 1. Do the parts equal the whole conceptually and logically?

2. Do the headings appear to be totally inclusive but mutually exclusive of the course title? See Worksheet 1. Do the parts equal the whole, conceptually and logically?

3. Are you teaching the highest priority knowledge that will enable an individual to be flexible and adaptable in various situations in society? See Worksheet 1.

4. If the student could take but one course in your subject in his lifetime, does your course outline indicate priority knowledge of the subject or discipline?

5. Does your course content need to be reorganized to show logical relationships between parts and the whole? See Worksheet 1.

6. If you answered No or ? to items 1-4 and Yes to item 5, your course can probably stand some improvement to increase content continuity. Does your course need better continuity?

7. Total all the subheading times for each class of knowledge. Is more than half the time spent in two or more knowledges? See Worksheet 1.

8. Total all subheading figures for Behavioral Classifications for each class of knowledge. Does any one knowledge class average 3.0 or less? See Worksheet 1.

9. Total all the heading times for each class of knowledge. Is more than half the time spent in two knowledge classes? See Worksheet 1.

10. Total all heading figures for Behavioral Classifications for each class of knowledge. Does any one knowledge class average 3.0 or less? See Worksheet 1.

11. If you answered Yes or ? to items 7-10 your students are getting only partial knowledge and may not be caused to use or apply any new knowledge that may acquire. Do your students' activities need increased involvement and knowledge expansion?

12. Does your course content have major face validity as to everyday life in society? Is it easy for students to see the connection between what they are studying and its application to everyday living?

13. Do the learning experiences cause the student to develop his intellectual, emotional, and physical abilities (all three)?

14. Do the knowledges and activities represent basic essentials of the family, educational, religious, political, and economical institutions?

15. Does your course have a great impact on the student as preparation for life in society?

16. Does your course content and instructional system develop performance abilities in relation to human interaction, valuing and decision-making, communicating, and performing, for example?

17. If you answered No or ? to any of items 12-16, your course probably should be made more relevant for preparing people for society. Does your course need to be made more relevant?

18. If you answered Yes or ? to any of items 6, 11, and 17, your course probably needs to be engineered. Does your course need to be engineered?

APPENDIX C

FACTORS AFFECTING ACTIVITY FEASIBILITY

1. Student Interest and Involvement. Does the activity represent real situations recognizable to the student at his age level? Is it representative of the concept being taught? Does the activity involve human interaction with people, data, and things? Would students work by themselves or in groups? Does the activity provide for optimum participation?

2. Student Ability. Is the activity such that students have the background experience and knowledges necessary to successfully carry out the activity? Is it foreign or closely related to the students' environment and experience?

3. Teaching Ability. Does the teacher have the background experiences and knowledges to teach the activity?

4. Time Required. Is there enough time in the period to develop the intended behaviors? Can the activity procedures be rearranged to meet the requirements? Can instructional aids be supplied to reduce the time needed?

5. Equipment Needed. What equipment is needed to carry out the activity? Does each student need the equipment or can the equipment be shared? Is it really needed to teach the concept?

6. Supplies Needed. What supplies are needed to carry out the activity? Does each student need the supplies or can they be shared? Are they really needed to teach the concept?

7. Cost. What is the estimated cost of the equipment, supplies, and instructional aids? Is the cost above or below the per pupil/day expenditure ratio for your course?

8. Safety. Is the activity safe? Does it conform to the state or local safety regulations?

9. Facilities, Space Requirements. Is there enough space per pupil to carry out the activity? Are the facilities safe and adequate for the activity? Will changes in the facilities be needed for the activity?

10. Class Organization, Number of Students. How will the class be organized for the activity—as individuals, groups, or as a class? How can the activity be carried out most efficiently and effectively to teach the concept? Does the class organization impair the teaching of the concept?

11. General Feasibility. Can the activity be implemented in your classroom with you students, your background, in the time available, with the necessary equipment and supplies, within your budget? Can it be carried out safely within your facilities and class organization? Does it really add to the development of behaviors representative of the concept?

Structural Development:
4 General Principles

1. The context of behaviors must be conceptualized

2. Subconcepts must be mutually exclusive in function
   No redundancy (no overlaps)
   No irrelevancies

3. Subconcepts must be totally inclusive of the major concept

4. All concepts must be translatable into action and be sequencially arranged.

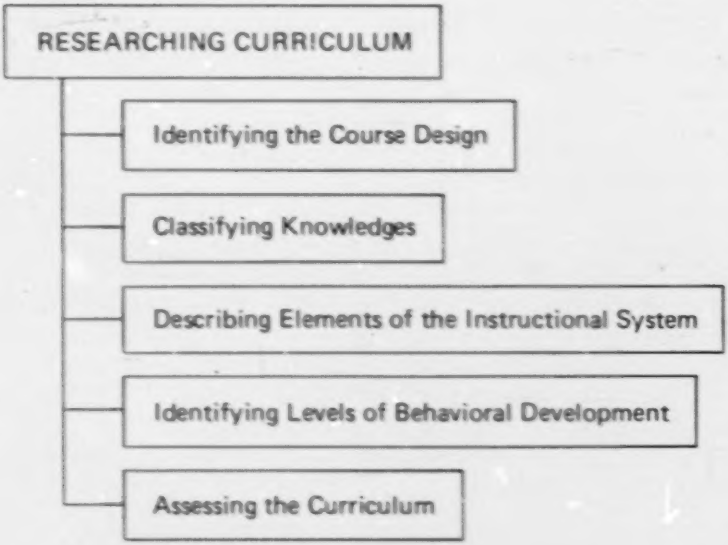
RESEARCHING CURRICULUM
Identifying the Course Design
Classifying Knowledges
Describing Elements of the Instructional System
Identifying Levels of Behavioral Development
Assessing the Curriculum

Figure 1

WORKSHEET 1

COURSE TIME LINE AND STRUCTURE (1) LANGUAGE ARTS (Course Title) GRADE 4 TIME 40 minutes per period

(2) 1st SEMESTER TIME LINE: INTRO. (0) · WORD PARTS (20) · READING (40) · WRITING (70) · (90) · (95)

2nd SEMESTER TIME LINE: SPEECH (95) · CURRENT EVENTS (140) · COM. IDEAS (160) · (180) · (185)

SECTION A

SECTION B

(5) Subheadings (6) Knowledge Classification: P-Prescriptive D-Descriptive T-Technological F-Formal

(3) Heading (4) Time (6) Behavioral Classification: 1 Perceiving 2 Imitating 3 Manipulating 4 Performing 5 Perfecting

1 INTRODUCTION	10	P	1
A ADMINISTRATIVE DETAILS	4	D	1
B OVERVIEW OF COURSE	6	D	1
C			
D			
E			

2 WORD PARTS	30	F	3
A VOWELS	5	F	3
B CONSONANTS	5	F	3
C SYLLABLES	10	F	3
D PREFIXES, SUFFIXES	10	F	3
E			

3 READING	30	T	25
A SHORT STORIES	10	P	3
B NEW WORDS	5	T	2
C GRAMMAR	10	F	2
D USING WORDS	5	T	3
E			

4 WRITING	30	D	37
A LETTERS	10	T	4
B SHORT STORIES	10	P	3
C ASSIGNED STORIES	5	D	4
D TAKING NOTES	5	T	4
E			

5 SPEECH	30	T	32
A PRONUNCIATION	5	T	3
B TALKING	5	T	4
C DISCUSSION	10	P	3
D LISTENING	5	T	3
E SHORT TALKS	5	T	3

6 CURRENT EVENTS	30	T	36
A PERIODICALS	15	T	3
B REPORTS	15	T	4
C			
D			
E			

7 COMMUNICATING IDEAS	10	T	35
A OPINIONS	5	P	4
B INTERPRETING IDEAS	5	T	3
C			
D			
E			

8			
A			
B			
C			
D			
E			

9			
A			
B			
C			
D			
E			

APPENDIX D

I. KNOWLEDGE CLASSIFICATION: Symbols and functions

SYMBOL	FUNCTION
P-Prescriptive	to prescribe what ought to be; to establish values about structures, occurrences, worthwhileness, and methodology
D-Descriptive	to describe what is and what was; to increase the probability of a proposition about phenomena, events, facts, data
T-Technological	to establish efficiency and effectiveness of behavior; to perform; to experience; practices, actions, procedures; recognized by how to do and "ing" word endings
F-Formal	to express and interpret meanings of symbols, words, vocabulary, nomenclature

II. COGNITIVE DOMAIN VARIABLES

1. Knowledge – involves the recognition and recall of facts and specifics.

2. Comprehension – the learner interprets, translates, summarizes, or paraphrases given material.

3. Application – involves the use of material in a situation which is different from that situation in which it was originally learned.

4. Analysis – involves separating a complex whole into its parts, until the relationship among the elements is made clear.

5. Synthesis – involves combining elements to form a new original entity.

6. Evaluation – involves acts of decision-making, judging, or selecting based on a given set of criteria. (These criteria may be objective or subjective.)

III. AFFECTIVE DOMAIN VARIABLES

1. Receiving – the learner is aware of or is passively attending to certain phenomena and stimuli (i.e., listening).

2. Responding – the learner complies to given expectations by attending or reacting to certain stimuli or phenomena (i.e., interests).

3. Valuing – the learner displays behavior consistent with a single belief or attitude in situations where he is forced to comply or obey (i.e., internal commitment consistent with external behavior).

4. Organization – the learner is committed to a set of values as displayed by his behavior (i.e., successful internalization of values).

5. Characterization – the total behavior of the learner is consistent with the values he has internalized (i.e., philosophy of life—totally behaving as you believe).

IV. PSYCHOMOTOR DOMAIN VARIABLES

1. Perception – involves the sensory reception of stimuli, e.g., hearing sounds and words, seeing forms and actions, touching or feeling texture, tasting, and smelling. Tends to build sensory awareness.

2. Imitation – duplicating an action or behavior in response to preceived stimuli. The individual can display the sensory and

motor actions required to repeat an act. Tends to build skill conformity.

3. Manipulation – using sensory and motor actions to respond in an analgous or similar situation in which it was imitated. Shows coordination of sensory and action skills. Tends to build skill recognition.

4. Performance – the individual functions or operates independently of manipulation. Applies sensory and motor skills as a matter of habit or matter of instinct. The individual can function in a variety of situations dissimilar to those of manipulation. Tends to build skill independence.

5. Perfection – the individual exhibits a high degree of sensory and motor skills, expertise, sensitivity, and artistry in his performance. Tends to exhibit high level capabilities.

V. PSYCHOMOTOR DOMAIN FUNCTIONS

1. Perceiving – the act of receiving and recognizing certain particular stimuli or phenomena (i.e., watching a demonstration, listening, perceiving what is going on or being said). Generally passive activity but with the senses responsive to stimuli. Implies recognition, recall, and reception of information in a context. Tends to build a frame of reference for behavioral development.

2. Imitating – the act of interpreting, translating, and respoinding to repeat or stimulate an act in accordance with stimuli or phenomena (i.e., repeating word pronunciation after the teacher, assuming a bodily stance as shown, working a problem as shown). Low level developmental activity dependent upon the same situation in which it was first encountered. Implies comprehension of and response to stimuli. Tends to build skill conformity by repeating an act.

3. Manipulating – an act of valuing and applying knowledge to exhibit an action in a situation other than which it was originally

encountered. Activity independent of original example. Application of knowledge to new or similar situations (i.e., solving a new problem in accordance with the original example, judging a new situation and trying out knowledge). Implies application and valuational abilities. Tends to build skill recognition through practice.

4. Performing – the act of analyzing, synthesizing and organizing actions to act rationally or functionally. The learner can meet new situations with confidence and well-being. The learner has his intellect, emotions, and skills developed to the point of "ownerships" and can function independently of manipulating. He can analyze an entity into its parts and make new relationships consistent with his values. Implies abilities to analyze, synthesize and organize as a matter of intent. Tends to build operational skill independence.

5. Perfecting – the act of evaluating, and behaving at a high level of sensitivity, expertise, and artistry. Highly independent activity seeking to apply knowledge and skills creatively. The learner fully understands and can control knowledge, emotions, and achieve higher levels of being. Internalization of knowledge is reflected in his character and life style. Makes judgments and decisions consistent with values and knowledge. Implies evaluation and characterization abilities. Tends to build refinement in operational efficiency and effectiveness.